लाल बहादुर शास्त्री राष्ट्रीय प्रशासन अकादमी
L.B.S. National Academy of Administration
मसूरी
MUSSOORIE
पुस्तकालय
LIBRARY
108652
अवाप्ति संख्या
Accession No. 20407
वर्ग संख्या
Class No. 380·1413088 44
पुस्तक संख्या
Book No. Agr

rketing Adviser to the

			Price.
		. . . . .	Rs. 1-4-0 or 2s.
		Perishable Produce	As. 12 or 1s. 3d.
		ng) Act, 1937, with of print. See item 17	–
		ceting of **Wheat** in	As. 8 or 10d.
		eting of **Wheat** in	As. 8 or 10d.
		rketing of **Wheat** in	As. 8 or 10d.
		g Adviser and summarised Officers in provinces t December, 1937 .	As. 6 or 8d.
		. . . .	Rs. 1-4-0 or 2s.
		Burma . .	Rs. 1-4-0 or 2s.
		nd Burma . .	Rs. 1-4-0 or 2s.
		eting of **Linseed** in India in *English*	As. 8 or 9d.
12	AMA. 17	Agricultural Produce (Grading and Marking) Act, 1937, with Rules made prior to 31st August, 1940	As. 12 or 1s.
13	AMA. 13.	Abridged edition of the Report on the Marketing of **Linseed** in India in *Bengali*	As. 8 or 9d.
14	AMA. 14.	Abridged edition of the Report on the Marketing of **Linseed** in India in *Hindi*	As. 8 or 9d.
15	AMA. 15.	Abridged edition of the Report on the Marketing of **Linseed** in India in *Marathi*	As. 8 or 9d.
16	AMA. 16.	Abridged edition of the Report on the Marketing of **Linseed** in India in *Urdu*	As. 8 or 9d.
17	AMA. 7·38 .	Annual Report of the Agricultural Marketing Adviser and summarised reports of Senior Marketing Officers in provinces and certain States for the year ending 31st December, 1938 .	As. 12 or 1s.
18	AMA. 19.	Abridged edition of the Report on the Marketing of **Eggs** in India and Burma in *English*	As. 8 or 9d.
19	AMA. 7·39 .	Annual Report of the Agricultural Marketing Adviser and summarised reports of Senior Marketing Officers in provinces and certain States for the year ending 31st December, 1939 .	Rs. 1-10-0 or 2s. 6d.
20	AMA. 11.	Report on the Marketing of **Grapes** in India and Burma . .	Rs. 1-4-0 or 2s.
21	AMA. 18.	Report on the Marketing of **Coffee** in India and Burma . .	Rs. 1-4-0 or 2s.
22	AMA. 21.	Report on the Marketing of **Potatoes** in India and Burma . .	Rs. 1-4-0 or 2s.
23	AMA. 22.	Report on the Marketing of **Milk** in India and Burma . . .	Rs. 1-4-0 or 2s.
24	AMA. 25.	Preliminary guide to **Indian fish, fisheries, methods of fishing and curing**	Re. 1 or 1s. 6d.
25	AMA. 27.	Abridged edition of the Report on the Marketing of **Eggs** in India and Burma in *Urdu*	As. 8 or 9d.
26	AMA. 26.	Abridged edition of the Report on the Marketing of **Eggs** in India and Burma in *Hindi*	As. 8 or 9d.
27	AMA. 20.	Report on the Marketing of **Rice** in India and Burma . . .	Rs. 1-4-0 or 2s.
28	AMA. 24.	Report on the Marketing of **Groundnuts** in India and Burma	Rs. 1-4-0 or 2s.
29	AMA. 7·40 .	Annual Report of the Agricultural Marketing Adviser and summarised reports of Senior Marketing Officers in provinces and certain States for the year ending 31st December, 1940 .	Rs. 1-4-0 or 2s.
30	AMA. 28.	Abridged edition of the Report on the Marketing of **Potatoes** in India and Burma in *English*	As. 8 or 9d.
31	AMA. 29.	Abridged edition of the Report on the Marketing of **Grapes** in India and Burma in *English*	As. 8 or 9d.
32	AMA. 30.	Abridged edition of the Report on the Marketing of **Milk** in India and Burma in *English*	As. 8 or 9d.

(Continued inside back cover).

Marketing Series No. 36

AMA 41
850

AGRICULTURAL MARKETING IN INDIA

Report on the
MARKETING OF HIDES
IN
INDIA
AND
BURMA

PUBLISHED BY THE MANAGER OF PUBLICATIONS, DELHI.
PRINTED BY THE MANAGER, GOVERNMENT OF INDIA PRESS, SIMLA.
1943

Price: Rs. 1-4-0 or 2s.

List of Agents in India and Burma from whom Government of India Publications are available.

- ABBOTTABAD.—English Book Store.
- AGRA—
  - English Book Depot, Taj Road.
  - Indian Army Book Depot, Dayalbagh.
- AHMEDABAD.—H. L. College of Commerce Co-operative Store, Ltd.
- AJMER.—Banthiya & Co., Ltd., Station Road.
- AKOLA.—Bakshi, Mr. M. G.
- ALLAHABAD—
  - Central Book Depot, 44, Johnstonganj.
  - Kitabistan, 17-A, City Road.
  - Ram Narain Lal, 1, Bank Road.
  - Superintendent, Printing and Stationery, U. P.
  - Wheeler & Co., Messrs. A. H.
- BOMBAY—
  - Co-operators' Book Depot, 9, Bakehouse Lane, Fort.
  - International Book House, Ash Lane, Esplanade Road.
  - Joshi, Mr. V. G., News Agent, Devgad Baria, *Via* Piplod.
  - Kothari Book Depot.
  - Lakhani Book Depot, Bombay, 4.
  - New Book Co., Kitab Mahal, 188-90, Hornby Road.
  - Popular Book Depot, Grant Road.
  - Superintendent, Govt. Printing & Stationery, Queen's Road.
  - Taraporevala Sons & Co., Messrs. D. B.
  - Thacker & Co., Ltd.
  - Tripathi & Co., Messrs. N. M., Princess Street, Kalbadevi Road.
  - Wheeler & Co., Messrs. A. H.
- CALCUTTA—
  - Book Company.
  - Chatterjee & Co., 3, Bacharam Chatterjee Lane.
  - Chukervertty, Chatterjee & Co., Ltd., 13, College Square.
  - Das Gupta & Co., 54/3, College Street.
  - Hindu Library, 137-F, Balaram De Street.
  - Lahiri & Co., Ltd., Messrs. S. K.
  - Macmillan & Co., Ltd., 294, Bow Bazar Street.
  - Newman & Co., Ltd., Messrs. W.
  - Roy Chowdhury & Co., Messrs. N. M., 72, Harrison Road.
  - Sarcar & Sons, Messrs. M. C., 15, College Square.
  - Sarkar & Sons, Ltd., Messrs. S. C., 1/1/1-C., College Square.
  - Standard Law Book Society, 79/1, Harrison Road.
  - Thacker, Spink & Co. (1933), Ltd.
  - Wheeler & Co., Messrs. A. H.
- CAWNPORE—
  - Advani & Co., P. O. Box No. 100.
  - Indian Army Depot, Juhi.
- CUTTACK.—Press Officer, Orissa Secretariat.
- DEHRA DUN—
  - Jugal Kishore & Co.
  - Ideal Book Depot, Rajpur Road.
- DELHI—
  - Imperial Book Depot and Press, Near Jama Masjid (Machhliwalan).
  - Income-tax Law Publishing House, Chandni Chowk.*
  - Indian Army Book Depot, Daryaganj.
  - Jaina & Bros., Messrs. J. M., Mori Gate.
  - Oxford Book and Stationery Co.
  - Sharda Mandir, Ltd., Nai Sarak.
  - Young Man & Co., (Regd.), Egerton Road.
- DUM DUM CANTT.—Bengal Flying Club.†
- FEROZEPORE.—English Book Depot.
- GWALIOR.—Jain & Bros., Messrs. M. B., Sarafa Road.
- HYDERABAD (DECCAN).—Hyderabad Book Depot, Chaderghat.
- JAIPUR.—Garg Book Co., Tripolia Bazar.
- KARACHI—
  - Aero Stores.
  - English Bookstall.
  - Standard Bookstall.
- KARACHI (SADAR).—Manager, Sind Government Book Depot and Record Office.
- LAHORE—
  - Kansil & Co., Messrs. N. C., 9, Commercial Buildings, The Mall.
  - Malhotra & Co., Messrs. U. P., Post Box No. 94.
  - Minerva Book Shop, Anarkali Street.
  - Punjab Religious Book Society.
  - Rama Krishna & Sons, Anarkali.
  - Superintendent, Govt. Printing, Punjab.
  - University Book Agency, Kacheri Road.
- LUCKNOW.—Upper India Publishing House, Ltd., Literature Palace, Aminuddaula Park.
- LYALLPORE.—Lyall Book Depot.
- MADRAS—
  - Higginbothams.
  - Superintendent, Govt. Press, Mount Road.
  - Varadachary & Co., Messrs. P.
- MHOW.—British Book Depot.
- MOGA.—Army Musketry Stores.
- NAGAPATAM.—Venkataraman, Mr. B.
- NAGPUR—
  - Khot & Sons, Messrs. G. G. Sita Burdi, 3rd Modi Lane.
  - Superintendent, Govt. Printing, Central Provinces.
- NEW DELHI—
  - Bawa Harkishen Das Bedi, Ferozeshah Road.
  - Bhawnani & Sons.
  - Delhi and U. P. Flying Club, Ltd.†
  - Jaina & Bros. Messrs. J. M., Connaught Place.
  - Ramesh Book Depot & Stationery Mart, Connaught Place.
  - Saraswati Book Depot, 15, Lady Hardinge Road.
- PATNA.—Superintendent, Government Printing, Bihar, P. O. Gulzarbagh.
- PATNA CITY—
  - Lakshmi Trading Co., Padri-Ki-Haveli.
  - Raghunath Prasad & Sons.
  - Sinha & Bros., Messrs. R. P., Guzri Bazar.
- PESHAWAR—
  - British Stationery Mart.
  - London Book Co. (India), Arbab Road.
  - Manager, Govt. Printing & Stationery, N.-W. F. P.
- PESHAWAR CANTT.—Faqir Chand Marwah.
- POONA—
  - Deccan Bookstall, Fergusson College Road.
  - Dastance Bros., Home Service, 456, Rawiwar Peth.
  - International Book Service.
  - Ram Krishna Bros., Opposite Bishram Bagh.
- QUETTA.—Standard Bookstall.
- RAJKOT.—Mohanlal Dossabhai Shah.
- RANGOON—
  - Burma Book Club, Ltd.
  - Curator, Govt. Book Depot, Burma.
- RAWALPINDI.—Ray & Sons, Messrs. J., 43, K. & L. Edwardes Road.
- SHILLONG.—Superintendent, Assam Secretariat Press.
- SIALKOT CANTT.—Modern Book Depot, Bazar Road.
- SIALKOT CITY—
  - Buckingham & Co., Booksellers & Stationers, Greenwood Street.
  - Clifton & Co.
- TRICHINOPOLY FORT.—Krishnaswami & Co., Messrs. S., Teppakulam.
- TRIVANDRUM—
  - Booklovers' Resort, Taikad.
  - P.R. Bros., Main Road.
- VELLORE.—Venkatasubban, Mr. A., Law Bookseller.

---

*Agents for Income-tax, Law and allied Publications only.

†Agents for Publications on Aviation only.

TABLE OF CONTENTS.

	Page.
Introduction	(*viii*)
Note on international trade in raw hides	1
Chapter I.—Supply	4
A.—Production	4
(1) Survey methods	5
(*a*) Fallen hides	5
(*b*) Slaughtered hides	6
(2) Production of kips (cow, bullock and bull hides and calf skins)	6
(3) Production of buff hides (hides of buffaloes and of their young stock)	9
(4) Summary of Indian production	10
(5) Summary of Burmese production	11
B.—Seasonal variations in production	11
(1) Fallen hides	11
(2) Slaughtered hides	12
(3) Seasonal variations in the production of slaughtered hides in Burma	13
C.—Trend of production	14
(1) Effects of famine	15
(2) Veterinary activities to combat deaths in cattle	16
(3) Trend of slaughterings	17
D.—Position of India in the world production of hides	18
E.—Imports of hides and leather into India	19
(1) Total imports	19
(2) Raw hides	20
(*a*) Trend	21
(*b*) Periodicity of imports	22
(*c*) Sources	23
(3) Unwrought leather	23
(*a*) Trend	23
(*b*) Periodicity of imports	24
(*c*) Sources	25
(4) Tanned or dressed hides	25
F.—Imports of hides and leather into Burma	26
(1) Raw hides	26
(2) Dressed hides and unwrought leather	26
G.—Exports of hides and leather from India and Burma	28
(1) Total exports	28
(2) Exports of raw hides	29
(3) Kips	30
(*a*) Trend	30
(*b*) Periodicity of exports	31
(*c*) Destinations	31
(4) Buff hides	34
(*a*) Trend	34
(*b*) Periodicity of exports	35
(*c*) Destinations	36
(5) Calf skins	38
(6) Export of tanned or dressed hides	40
(*a*) Trend	40

PAGE.

(b) Periodicity of exports 41
(c) Destinations 42
(7) Export of unwrought leather 43
(a) Trend 44
(b) Periodicity of exports 44
(c) Destinations 45
(8) Development of the export trade in hides 45
H.—Note on Indo-Burma trade 47
I.—Net available supplies in India 50
J.—Net available supplies in Burma 51
K.—Note on the regulations on import of hides in certain countries .. 52
Inter-Chapter One 56
Chapter II.—Preparation for market 59
A.—Flaying 59
(1) Hides damaged by defective flaying 60
(2) Reduction in flay cuts 62
B.—Curing 63
(1) Processes adopted in the trade 63
(2) Unframed dry hides (*suktis*) 65
(3) Dry-framed hides 66
(4) Arsenicated hides 66
(5) Salt cured 67
(a) Wet-salted 68
(b) Dry-salted 70
C.—Issue of duty-free salt 70
D.—Suggestions for improvement in flaying and curing 73
(1) Brief review of efforts made in other countries 73
(2) Conditions in India and the general background 74
(3) Improvements in flaying 75
(a) Licensing of flayers 75
(b) Improving the city slaughterhouses 75
(i) General 77
(ii) Slaughtering booths 77
(iii) Hoists and conveyors 77
(iv) Trolleys for transport of offals and hides 77
(v) Preparatory departments 77
(c) Preparation of instructions for flayers, etc. 78
(d) Introduction of improved methods 78
(e) Payment of premiums for better flaying 78
(f) Introduction of improvement in the villages 79
(g) Improvement through the veterinary staff 79
(4) Improvements in curing 80
a) Improvement in preparation of *sukti* hides 80

PAGE.

(b) Improvement in preparation of dry-framed hides—adoption of Java method 80
(c) Establishment of Government hide curing yards 82
(d) Research on the curing properties of different types of salt available in the country 83
(e) Peripatetic demonstrations 84
(f) " Loading " of hides and its control 85
(5) Establishment of co-operative societies for effecting the improvements 85
Inter-Chapter Two 87
Chapter III.—Utilisation and demand 89
A.—Utilisation of leather for articles of common usage 89
B.—Demand from different industries 91
(1) General 91
(2) For indigenous tanning 92
(3) For making dressed hides (known as " half-tanned") 93
(4) For export trade (raw) 94
(5) For making finished leather 94
(a) Chrome leather 94
(b) Vegetable-tanned leather 95
(6) For use as raw 95
C.—Provincial requirements and utilisation 95
D.—Trend of utilisation and demand 97
E.—Note on seasonal variations in demand 98
F.—Note on utilisation of by-products 99
G.—Note on utilisation of and demand for hides in Burma 99
Inter-Chapter Three 100
Chapter IV.—Prices 103
A.—Unit of sale and basis of price quotation 103
(1) At preliminary stages 103
(2) At assembling markets 103
B.—Factors affecting the price of hides 105
(1) Fallen or slaughtered type 105
(2) Type of cure 106
(3) Weight of pelt 107
(4) Distinction due to sex 108
(5) Quality of the hide 108
(6) District of origin 109
(7) Influence of seasons 110
C.—Seasonal variation in prices 111
(1) Kips 112
(2) Buff hides 113
D.—Prices in relation to quality 114
(1 Shippers' (Hamburg) classification 114

PAGE.

(2) Factory tanners' classifications 115

(3) "South Indian tanners" selections 116

(4) AGMARK grades 117

(5) Prices paid by the Government Harness and Saddlery Factory, *Cawnpore*, for the quality required by it 118

E.—Note on hide prices in some of the other countries 119

F.—Trend of prices 119

(1) Hides for export 119

(2) Hides sold for home use 122

(*a*) Kips 122

(*b*) Buff hides 123

G.—Note on prices at the beginning of the present War compared with those prevailing at the commencement of the last Great War (1914) 124

H.—Note on price intelligence and suggestions for setting up a proper service. 124

Inter-Chapter Four 127

Chapter V.—Assembling and distribution .. • 130

A.—General 130

B.—Agencies engaged in the assembling and distribution of raw hides and their functions 131

(1) General 131

(2) *Chamars* 131

(3) Butchers 133

(4) Village *beoparis* 133

(5) Town dealers 134

(6) Commission agents or *aratdars* 134

C.—Hides markets 134

(1) Rural 134

(2) Urban 135

D.—Methods of sale 136

(1) In villages 136

(2) At slaughterhouses 136

(3) At larger markets 137

E.—Merchandising charges 138

(1) In rural markets 138

(2) In large assembling and distributing markets 138

(*a*) Charges incurred by country dealers in consigning goods to commission agents 138

(*b*) Charges of commission agents recovered from sellers for clearing the goods and selling them off 139

PAGE.

(*i*) Clearance and cartage .. 139
(*ii*) Octroi, etc. .. 139
(*iii*) Commission .. 139
(*iv*) Charity .. 140
(*v*) Rebate .. 140
(*vi*) Allowance .. 140
(*vii*) Miscellaneous charges .. 140
(*c*) Charges paid by final buyers .. 140

F.—Finance of assembling and distribution .. 142
(1) Producers .. 142
(2) Merchants .. 142
(3) Export trade .. 143

G.—Note on the position in Burma .. 143

Inter-Chapter Five .. 144

Chapter VI.—Quality and grading .. 147
A.—Quality factors .. 147
(1) Size and pattern .. 147
(2) Substance, thickness and weight .. 147
(3) Grain .. 147
(4) Method of curing .. 148
(5) Mechanical defects .. 148
(*a*) Branding .. 148
(*b*) Goad marks .. 149
(*c*) Yoke marks .. 149
(*d*) Scratches and punctures .. 149
(*e*) Other injuries .. 149
(6) Biological defects .. 149
(*a*) Warble holes .. 150
(*b*) Tick marks .. 150
(*c*) Pock and other marks .. 150
(7) Other factors .. 151
(*a*) Age of animal .. 151
(*b*) Part of the year when killed or dead .. 151
(*c*) Storage .. 151
(*d*) Transport .. 151
B.—Sorting of hides by the trade .. 151
(1) General .. 151
(2) Regional classification .. 151
(3) Classification according to cures .. 154
(4) Classification according to quality .. 154
(5) Classification according to weight .. 154

PAGE.

C.—Classifications current in the different branches of the trade .. 155

(1) The shippers—Hamburg classification 155

(2) Chrome tanners 160

(3) Bark tanners 160

(4) *Madrasi* or South Indian tanners 161

(5) *Chamars* 161

D.—Grading of hides under the AGMARK 161

(1) The AGMARK hide specifications 161

(2) Method of grading and marking 16

(3) Working of the AGMARK hide grading scheme 164

(*a*) Number of hides graded 165

(*b*) Quality of hides graded 165

(4) Finance and costs of grading 168

(5) Comparison of AGMARK specifications with tanners' and shippers' classifications 168

E.—Note on the system of grading and marking in countries abroad .. 171

(1) United States of America 171

(*a*) Tentative market classes and grades of green salted kips and calf skins 171

(*b*) Tentative standards : Market classes and grades for butcher and country green salted cattle hides (1932) 172

(*c*) Grades specified under the Standard Hide Contract of the Commodity Exchange Inc , New York 174

(2) Argentina 175

(3) England (New Castle) 177

(4) Germany 177

(5) Belgium 178

(6) South Africa 179

Inter-Chapter Six 180

Chapter VII.—Transportation 183

A.—General 183

B.—Methods and costs of transport 183

(1) Head-loads and *bahangis* (shoulder slings) 183

(2) Pack animals 184

(3) Country carts 184

(4) Horse *tongas* 186

(5) Motor lorries 186

(6) Rail 188

(*a*) Freight charges 188

(*b*) Conditions of consignment 189

(7) Country boats 189

(8) Steamers 190

C.—Suggestions for improving the transport by rail 190

PAGE.
D.—Special facilities for loading and unloading 191
(1) Road transport 191
(2) Rail transport 191
E.—Packing for transport 192
(1) By producers and rural collectors 192
(2) Between markets 192
(3) For export 192
(4) Cost of baling 193
F.—Transport of hides in Burma 193
Inter-Chapter Seven 194
Chapter VIII.—Storage 197
A.—General 197
B.—Methods of storage 197
(1) Producers 197
(2) Rural collectors 198
(3) Town merchants 198
(4) Wholesale merchants and exporters 198
C.—Note on the godowns of wholesale merchants 199
D.—Costs of storage 199
Inter-Chapter Eight 200
Chapter IX.—Reorganisation of hide marketing 202
A.—Conditions that call for reorganisation 202
B.—Stage at which control should be enforced 204
C.—Type of hide control necessary 206
D.—Organisation of buyers not necessary 208
E.—Classifications for grading the hides 208
F.—Hide Inspectorate and cost 210
Inter-Chapter Nine 213
Recommendations arising out of the Report 216
I.—Improvement in flaying 216
II.—Improvement in curing 219
III.—Research in curing 220
IV.—Utilisation of weekly markets (*hats*, etc.), for hide improvement work. .. 221
V.—Market Intelligence 222
VI.—Transport of hides 223
VII.—Re-organisation of hide grading and marketing 224
VIII.—Certification of hides, exported from India 226
IX.—Development of export of Indian hides (tanned or raw) .. 227
X.—Research on insect pests which damage the hides 228
List of hide merchants, shippers and tanners 230
A.—Wholesale hide merchants and commission agents 230
B.—Shippers and exporters of hides from India 243
C.—Tanners and tanneries in India 246
Glossary of vernacular terms 253
Diagrams 14
Maps 2
Plates 33

INTRODUCTION.

Hides are one of the many important raw materials that India produces for her own industrial requirements or for export. This commodity is of considerable value, both in times of peace and war. A comprehensive, sound and up-to-date knowledge of the subject should, therefore, be a great asset to producers, businessmen and Government alike. This report fulfils a gap in that direction, for it describes precisely where hides are produced and in what quantities, how they are utilised, what their prices are, through what channels they reach the tanners and exporters, what their quality is, what handicaps the trade suffers from, and finally, what steps should be taken to put this important trade and industry on a sound footing.

Unlike most of the other countries, the production of "slaughtered" hides is unimportant in India. As many as 191 lakh hides, or nearly three fourths of total annual output of 257 lakh pieces, consist of "fallen" hides and are of animals which have died a natural death. From ancient times, it has been the privilege of the village *chamar* to receive free of charge the carcasses (including the hides) of all dead animals, be they cows, oxen, buffaloes, horses, goats or sheep. Thus the primary producer of the majority of the Indian hides is not the cattle owner but the *chamar*—who is an extremely useful and indispensable unit in the rural economy of the country, but probably is the poorest and most backward member of the Indian society. He accepts with gratitude any price paid for his hides and does not bother about improving the quality as long as there are purchasers for his poorly prepared goods. Butchers, who are responsible for the production of slaughtered hides, also are not very different from *chamars* as far as their conservative outlook is concerned.

All those who are engaged in the hide trade know well that many otherwise good hides are spoilt through defective flaying. They also know that, on the whole, curing, too, leaves much to be desired. Yet, it is not an easy task to send round experts (master flayers) to distant and scattered places where *chamars* operate and teach them proficient methods of flaying. Small scale attempts in this direction have not been very successful in the past, nor are fresh attempts of the same type likely to have a better fate. Similarly, there are basic difficulties in the way of improving the curing of hides. Throughout the world, salt is acknowledged to be the best and cheapest hide curing medium and in other countries it is used extensively. In India, salt is an excisable article and its duty-free use for curing of hides is allowed only under certain conditions. As the curing has to be done soon after flaying, the extension of salt cure under village conditions for the majority of Indian hides presents inherent complexities. Finally, the casual and scattered production of hides in the countryside (the actual figure of production works out at less than three hides per village per month) compels the trade to adopt methods of assembling and distribution which are admittedly complicated and uneconomical.

Such is the background of the picture, in so far as the production, preparation, collection and marketing of this important commodity in its early stages are concerned. In the circumstances, schemes for obtaining direct benefits for the producers in a speedy way are very difficult to work out. Nor are there any indications that present conditions will change with any rapidity in the near future. Therefore, hope for effective development and improvement must necessarily lie in a " rearguard action ", that is, in improving their marketing *after the hides have reached the terminal markets.* There, the sellers (merchants and commission agents) and buyers (tanners and exporters) are exceptionally well placed, possess considerable foresight, and rank among the premier businessmen and industrialists of the country.

It is indeed gratifying that they are already conscious of the need for improving matters in the hide trade.

A special chapter (Reorganisation of Hide Marketing) has been written in the above connection and the suggestions therein as well as in the Report as a whole are commended to the merchants, commission agents, shippers and the tanners' associations and federations, for their favourable consideration. Only through their co-operation can matters be improved and the way paved for the ultimate filtering down of the benefits of improved marketing to the poor *chamars* and butchers.

Thanks and acknowledgments are due to a large number of *chamars,* butchers, *beoparis,* commission agents, tanners, shippers and others for their kind and willing co-operation with the Marketing Staff, for having supplied ungrudgingly useful data and information for this report.

NOTES—

(1) The Government of India should not be regarded as assuming responsibility for all or any of the materials or recommendations contained in this report.

(2) Owing to Har the Government of Burma could not be consulted before publication of the Report.

THE REPORT IS SHORT AND THE WHOLE OF IT WILL BEAR READING, BUT THOSE WHO WISH TO GET QUICKER GRASP OF THE ESSENTIAL POINTS MIGHT FIRST READ THE INTER-CHAPTERS, AT PAGES 56, 87, 100, 127, 144, 180, 194, 200 AND 213 AND THE CHAPTER ON RECOMMENDATIONS AT PAGE 216.

CENTRAL AGRICULTURAL MARKETING DEPARTMENT,
(GOVERNMENT OF INDIA).
DELHI :
June 1942

NOTE ON INTERNATIONAL TRADE IN RAW HIDES.

Hides and leather are commodities of universal use. The production of the former and the tanning of the latter are concentrated in different parts of the world with the result that, to some extent, almost all countries contribute to the international trade of these commodities. But the movements are not always published even in the case of the principal exporting or importing countries. In some cases and for certain years, the figures for hides, skins and leather are given in a combined form. At times, the tonnage under cattle hides includes that of horse hides also. For some countries the figures of re-exports are included in those of initial exports. Further, the type of cure adopted in the different countries, before export, is not always indicated with the result that the average weight per hide cannot be worked out.

Such information as could be sorted out from certain publications, is compiled in the table below. For reasons given above, the figures have their limitations and should be taken to give only an approximate idea about the world trade in raw hides.

International trade in raw hides.*

(In tons).

Principal exporting countries.	Principal importing countries.							
	Germany.	United States of America.	United Kingdom.	Holland.	Belgium.	France.	Other countries.	Total.
Argentina	35,187	37,641	12,979	..	6,625	1,450	43,456	1,37,338
Brazil	17,846	5,731	1,786	3,384	3,060	486	18,247	50,540
France	6,990	3,464	2,663	6,906	8,307	..	9,111	37,441
Holland†	4,574	714	4,689	..	3,484	3,878	8,081	25,420
India	7,165	700	5,225	460	..	700	9,995	24,245
Belgium	2,694	..	2,013	8,268	..	1,634	4,624	19,233
Canada	..	14,372	1,082	..	..	..	1,215	16,669
United States of America	111	..	1,702	1,282	61	100	13,389	16,645
South Africa ..	2,009	279	4,263	453	587	1,042	4,928	13,561
Sweden	5,008	721	2,835	747	219	1,552	1,536	12,618
Czechoslovakia ..	1,870	404	2,840	..	..	613	3,861	9,588
United Kingdom ..	2,136	904	..	2,021	..	725	3,159	8,945‡
China	1,124	529	253	1	..	219	5,170	7,296
Total ..	86,714	65,459	42,330	23,522	22,343	12,399	1,26,772	3,79,539

***Compiled from "Leather Trades' Year Book", 1937. The figures relate to cattle and buffalo hides (including calf skins) pertaining mainly to trade in 1936.**

†Including the Dutch Empire trade.

‡Besides this the United Kingdom has a re-export trade of approximately 8,800 tons but the destinations are not known.

It is seen that Argentina and Brazil are the most important exporters of raw hides, mainly because of their huge cattle population, large meat processing but comparatively less developed leather tanning industries. These two Latin American countries command almost half the tonnage of the world's export trade in raw hides. India stands fifth in the list of raw hide exporting countries. But the Indian hides are lighter and are exported in dry condition, with the result that their weight is only about 10 lb. per piece or 225 pieces per ton. The Argentina and Brazilian hides, on the other hand, are much heavier and the bulk of them are exported in wet-salted condition. Their average export weight is about 50 lb. each or only 45 pieces to a ton. Accordingly, the annual exports of hides from Argentina and Brazil amount to only about 62 and 23 lakh pieces respectively. Against this, India exported in 1935-36 approximately 56 lakh pieces of light hides. Thus, on the basis of the number of raw hides, India stands second only to Argentina in the international export trade.

Further, Argentina and Brazil have hardly any export trade in tanned hides or in leather. On the other hand, the Indian trade in these is even of greater importance than its large trade in raw hides. Thus, if the total exports of raw and tanned hides and of unwrought leather are taken into account, the Indian trade amounts to approximately 123 lakh pieces per annum (1935-36). Considering this aspect, *viz.*, number of pieces exported annually, India in recent years has been the most important exporting country for hides and leather in the world trade. Besides, it is the only reservoir for drawing large supplies of light hides by the world markets.* In the following table the total export trade of raw and tanned hides and leather of the eight most important countries of the world has been reviewed.

Annual exports from eight principal countries†.

(In lakhs).

Country.	Raw hide pieces.	Tanned (unfinished) pieces.	Leather pieces.	Total pieces.
India	55·8	57·3	9·8	122·9
Argentina	61·8	*Neg.*	*Neg.*	61·8
United Kingdom	8·0	8·7	27·4	44·1
United States of America ..	7·5	0·5	21·0	29·0
Germany	0·3	*Neg.*	25·2	25·5
France	16·8	5·4	1·8	24·0
Brazil	22·7	*Neg.*	*Neg.*	22·7
Holland	11·4	*Neg.*	8·3	19·7

---

*Further particulars about the types of hides produced in different countries of the world and in India are given in the chapter on "Quality and Grading of Hides".

†Compiled from data given in the "Leather Trades' Year Book", 1937. In converting the tonnage into number of pieces, the following basis (in pounds per piece) has been adopted.

India.—Raw hide—10, Dressed hide—7 ; Unwrought leather—3.

Other countries.—Raw hide—50 ; Sole leather—40 ; Rough vegetable tanned hide—10 ; Rough vegetable tanned calf skin—4 ; Mixed tanned hide (France)—7½ ; Mixed tanned calf skin (France)—4 ; Box and willow calf skin—3 ; Undressed hide —22 ; Undressed calf skin—3. 28 sq. ft. of patent leather, 25 sq. ft. of chrome uppers and 16 sq. ft. of calf or kip chrome uppers are taken as one piece of leather.

The preceding table shows clearly the position of India and other important exporting countries and hardly needs further interpretation. It is true that conditions differ from year to year but the above position is generally applicable to 1935-36.

So far as the imports of hides and leather are concerned, the Central European countries have been of considerable importance. Amongst the European countries, Germany has been an important buyer of hides and in 1936-37 its imports were the highest in the world, equal to more than double that of the United Kingdom. The United States of America is the second largest importer.

Due to reasons given in the beginning of this section it is rather difficult to assess correctly the annual value of international trade in raw hides. But, assuming the weight of cured hides at about 37 lb. per piece or 60 pieces to a ton, and the price at about 6 *d.* per lb. or about Rs. 13 per hide, the value of 3·8 lakh tons of raw hides put on the international markets would be approximately £23,000,000 or about Rs. 30 crores.

CHAPTER I.—SUPPLY.

In pre-historic times when man lived in caves, he used for covering himself the hides and skins of the animals he hunted. The modern man has not altogether given up the use of leather clothing, and covering for the feet and hands, in the form of boots, shoes and gloves are still widely made from leather for which hides and skins are the basic raw products.

In the trade, the larger and thicker pelts of cows, bullocks, buffaloes, horses, camels, etc., are called " hides " while the smaller and lighter ones of calves, sheep, goats, deer and other wild animals are termed " Skins ". The term " Fur " is used for small ornamental skins, utilised with hair or fleece attached to them.

In India, hides and crudely tanned leather are in use from early times. To mention only a few instances of ancient usages, the large receptacles called *kose*, *charsa*, or *moth*, used for drawing water from wells for irrigation purposes, were made from partially tanned hides. They are still popular in many parts where well irrigation is practised. Before the introduction of tins, drums, tanks, etc., ghee, oil and other liquids were stored and transported in containers made of raw hides, called *kuppas*. These are even now widely used in *Sind* and *Rajputana* and to a lesser extent in other areas. Besides, indigenous contrivances for winnowing grain, ropes, riggings, coverings for boats, etc., are still made of raw and partially tanned hides. *Pakhal*, *mashak* and *dole* are other ancient gears, made of leather and hide, which the water-carriers even now use in many parts of the country.

A.—Production.

Most of the hides in other countries are obtained as one of the by-products of the meat industry and represent a small value in relation to the carcass of the slaughtered animal. The number of dead or fallen hides in those countries is unimportant. In India, the position is different. On account of religious and other reasons, beef is not eaten by most of the people and large abattoirs or meat packing factories are absent. The killing of animals for food, takes place on a comparatively small scale in municipal slaughterhouses and in the villages. Generally, old or unserviceable animals are slaughtered, but in certain cities young cows and she-buffaloes are also slaughtered at the end of their lactation as these cannot be economically maintained there during the dry periods.

The majority of hides produced in the country numbering several millions annually are, therefore, of the " fallen " type, obtained from animals which die a natural death. In their case, the hide represents almost the entire cash value recoverable from the dead animal. The value of bones, hoofs and horns is comparatively small, while meat of dead animals is never sold. In the circumstances, the proper preparation of the hides and their marketing are of considerable economic importance to the country.

In India, there are 1,800 lakh cattle and 500 lakh buffaloes constituting a third of the world's cattle and buffalo population. Besides, there are about 17 lakh horses and ponies, 15 lakh donkeys and mules and 5 lakh camels. Thus the number of animals, from which hides are obtainable, is very large. Commercially, however, only the hides of cattle and buffaloes are important and the discussion in this report is mainly confined to them.

There are several estimates available of the production of hides for the country as a whole, but data relating to individual provinces and States are absent. During the present survey, the figures of production in the various tracts were separately estimated. They were based on enquiries and the survey methods adopted are briefly described below.

(1) SURVEY METHODS.

(*a*) *Fallen hides.*—The production of fallen hides is directly related to the number of animals which die every year, through disease and other causes. The deaths are, however, recorded only in the case of certain diseases and the figures are far from complete, as under village conditions the disease may not always be diagnosed before death. The task of estimation has, therefore, been rather difficult and laborious. In the *Western India States*, the dead animals are reckoned to be State property and annual contracts are given for collection of hides. Such contractors have, therefore, been found useful in supplying information on the production of fallen hides in those areas. For other areas, the extent of cattle mortality was determined through enquiries, made from cattle owners, *chamars*, hide merchants and staff of the revenue and veterinary departments. In the case of *Mysore State*, the total number of dead animals was taken from its Cattle Mortality Report and in the case of the *Madras Province*, the estimates were based on the findings of the Hides Cess Committee Report, namely, that the average life of cattle was about 4 years. The records of cattle mortality maintained by the *patwaris* in *Raipur* and *Drug* Districts and those of the government dairy farms were taken into account for computing the production of fallen hides in the *Central Provinces*.

In computing the production of fallen hides, there is one important aspect, namely, that the hides of all animals which die are not necessarily claimed. The handling of the dead animal and its flaying is almost exclusively done by a special class of people known as *chamars*, *dheds* and *raighars* in northern parts and *vettians* and *madigas* in the south. Ordinarily, they are found in most of the villages, but sometimes they may not be available. Arrangements for flaying the dead animal are, therefore, not always possible as the *chamar* may not be able to reach in time to remove the hide in good condition. When the animal dies in a jungle or in an out-of-the-way place, it may not be possible to send for the *chamar* at all. Besides, the owner of the animal is not interested in the disposal of the carcass except in getting it removed when the animal has died in his yard. When, therefore, animals die in the jungle no one may inform the *chamar*. Sometimes, putrefaction may set in or the hide may be torn by vultures, jackals, etc., and it may not be worth claiming. In certain parts of *Assam*, *Bengal*, *Bihar* and *Orissa*, a comparatively large number of hides is lost when cattle are drowned in the floods, which occur there practically every year.

Although it is known that losses of the above type take place throughout the country, the conditions are such that the task of estimating the annual figure with any degree of accuracy is extremely difficult. Enquiries, however, show that it varies in the different parts of the country and may be anything from 4 to 10 per cent of the fallen hides that are actually recovered. Approximately 10 to 25 lakh hides are thus lost annually in India. In terms of cash value, this amounts to about 20 to 50 lakh rupees per annum. A part of this waste can no doubt be prevented but under conditions peculiar to India, namely, that only a particular class of people can handle the dead animals and flay them, it appears that the major portion of it is inevitable especially because the commodity concerned is highly perishable in its green* condition.

In estimating the production of fallen hides in the different areas the above loss has been taken into account.

(*b*) *Slaughtered hides.*—According to the trade descriptions, a slaughtered hide is not necessarily the hide of an animal killed at a slaughterhouse. It may be a good quality fallen hide, that is, one which has been removed soon after death and is also well flayed and preserved. At any rate, the proportion of such hides is estimated to be not more than 5 per cent of the slaughtered hides and these are available mainly at cities and large towns and arise from draught or milch animals that die there.

At most of the municipal slaughterhouses, a fee is charged per animal for which accounts are maintained. Where no fee is charged, the number of animals slaughtered each day may be recorded. The estimates of the production of hides at slaughterhouses were, therefore, based on these figures. It is, however, observed that there is invariably some discrepancy between the animals actually slaughtered and those registered. Allowance for this was accordingly made. For production of slaughtered hides in the villages, enquiries were made from merchants regarding their arrivals in the markets.

In the case of slaughtered hides, there is practically no loss in numbers and all of them reach the markets.

(2) PRODUCTION OF KIPS (COW, BULLOCK AND BULL HIDES AND CALF SKINS).

Oxen type or cattle hides, that is, hides of cows, bullocks, bulls and calves, are different from hides of buffaloes and have various trade names. They are called cow hides, oxen hides, cattle hides, East Indian kips, kips, etc. In foreign trade, hides of large and fully grown animals are termed hides and those of under-sized or semi-mature animals are called kips. Generally, hides of less than 25 lb. green weight and 12 lb. in dry state are classified as kips. Owing to the fact that in many parts of India the weight of oxen type hides is low when compared with the standard weight of hides in Europe and America, the term kip is widely used for Indian oxen type hides. In this report, the term kips is used throughout to represent the oxen type hides, although some of them may be heavier than the standard kip weight.

---

* After the hide is flayed and before it is submitted to any process of curing or dressing, it is known as "green".

The table below gives the number of kips, fallen and slaughtered, produced in the various provinces and States of India and Burma. The corresponding cattle populations are also given for each area.

Annual production of kips.

——	Annual production. (Lakhs).			Percentage of Indian production.	Cattle population. (1935). (Lakhs).	Percentage of hide to cattle population.
	Fallen.	Slaughtered.	Total.			
Kashmir State	1·8	..	1·8	0·9	16·7	10·8
North-West Frontier Province including Agency and Tribal areas	..	2·4	2·4	1·2	15·3	15·7
British Punjab	5·2	2·6	7·8	3·9	97·9	8·0
Punjab States	1·6	..	1·6	0·8	34·2	4·7
Rajputana States	6·6	..	6·6	3·3	150·3	4·4
Central India States ..	2·8	..	2·8	1·4	42·9	6·5
Sind	1·5	0·2	1·7	0·8	20·8	8·2
Kathiawar, Gujarat and Baroda States	2·8	..	2·8	1·4	34·9	8·0
Bombay Province and States	7·2	1·7	8·9	4·5	84·8	10·5
Mysore State	0·6	2·8	3·4	1·7	41·9	8·1
Travancore State	0·5	1·5	2·0	1·0	10·7	18·7
Madras Province	30·1	8·5	38·6	19·3	177·9	21·7
Hyderabad State	11·5	1·7	13·2	6·6	99·2	13·3
Central Provinces	12·2	0·7	12·9	6·4	116·5	11·1
Eastern and Central Provinces States	4·7	..	4·7	2·4	45·9	10·2
United Provinces and States	11·2	4·8	16·0	8·0	237·7	6·7
Bihar	12·4	4·1	16·5	8·2	137·4	12·0
Orissa	4·0	1·3	5·3	2·7	44·8	11·8
Bengal	24·9	18·3	43·2	21·6	258·3	16·7
Assam	3·8	0·5	4·3	2·1	54·5	7·9
Other areas*	2·0	1·6	3·6	1·8	37·3	9·7
Total India	147·4	52·7	200·1	(100)	1759·9	11·4
Burma	2·7	5·2	7·9	..	51·2	15·4

---

* *British Baluchistan, Baluchistan States, Delhi Province, Cochin State, Coorg, Bundelkhand Agency States, Bengal* and *Assam States.*

The total annual production of kips in India is estimated at 200·1 lakh pieces. Of these, 147·4 lakhs or 73 per cent consist of fallen hides and the remaining 27 per cent or 52·7 lakhs of slaughtered hides. The annual kip production works out to approximately 12 per cent of the total population of cattle, *viz.*, cows, bullocks, bulls and young stock, based on the cattle census of 1935.*

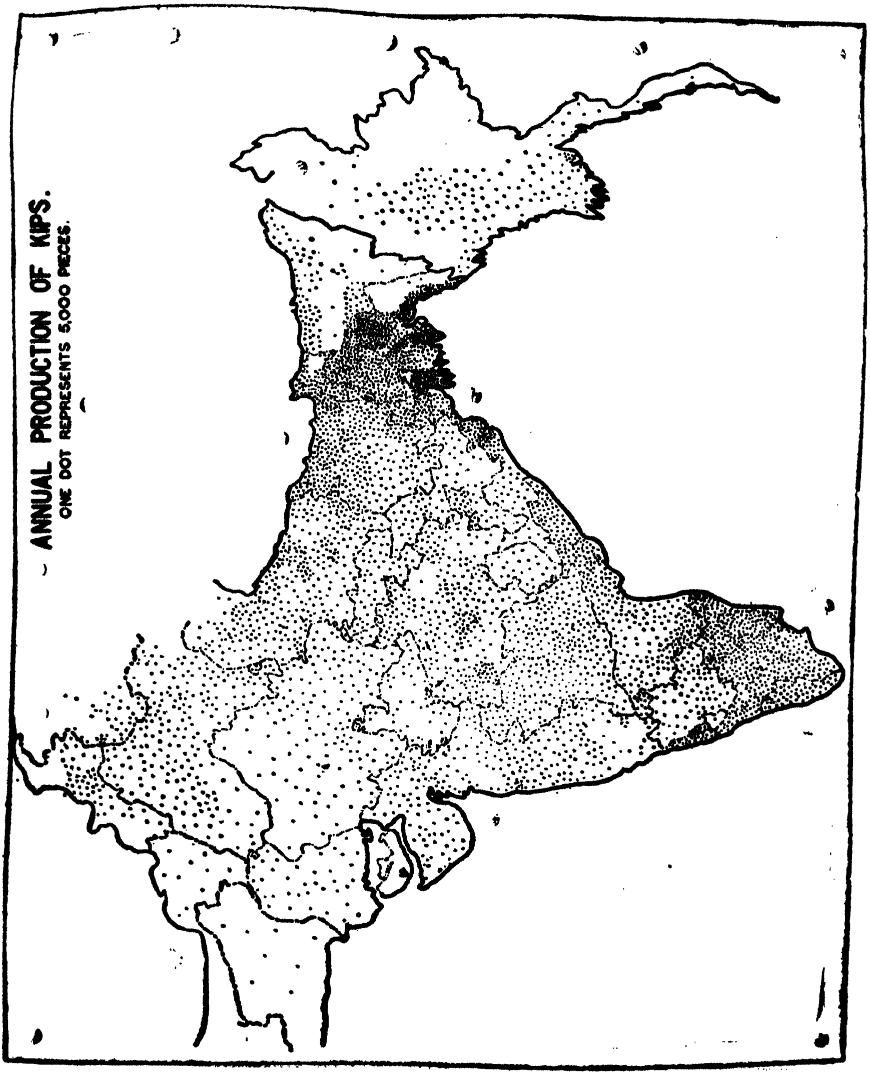
The map facing this page shows the concentration of hide production in different areas and figures for the more important provinces and States are graphically shown in the diagram opposite page 10. It is found that the production varies considerably from tract to tract and depends upon a number of factors, peculiar to each area. The basic factor is, no doubt, the distribution of cattle population. But the rates of mortality and slaughter, which influence hide production, depend upon the methods of rearing and management of the cattle, availability and type of fodder, climate and the number of beef eating population in an area. *Bengal*, with the largest number of cattle, naturally produces the largest number of kips and contributes more than a fifth to the Indian kip production. As the majority of the population are Mohammedans, the proportion of slaughtered hides is also significantly high. Beef, being cheaper than mutton, is obviously preferred.

Madras follows *Bengal* in point of production, contributing a little under 20 per cent of the total Indian kips. The proportion of slaughtered kips to the total hides in the province is, however, only 22 per cent compared with *Bengal* where it is over 42 per cent. The proportion of hide production to cattle population is the highest in this area. Cattle apparently die there in large numbers. The proportion of production in most of the other areas is under 5 per cent, the exceptions being the *United Provinces*, *Bihar*, the *Central Provinces* and *Hyderabad State*, which account for 8·0, 8·2, 6·4, and 6·6 per cent respectively. It is observed that the percentage of hides to cattle population is particularly low in the case of the *Punjab*, *Rajputana* and *Central India States*. This is due to the fact that cattle in these areas are generally superior and are well cared for by the numerous professional breeders who exist in those parts. In most of the Indian States the proportion of slaughtered hides is low as the slaughter of cattle is discouraged, if not prohibited. In the *North-West Frontier Province* almost the entire production is that of slaughtered kips. This is not because no animals ever die there but on account of the general practice amongst the local Mohammedans, who comprise about 97 per cent of the population, to slaughter the animal soon before its natural death. More details regarding the practice are, however, not available.

Burma has a population of a little over 51 lakh cattle and produces approximately 8 lakh kips per year. Of these, over 5 lakhs are of the slaughtered type, showing greater requirements for beef as compared with India.

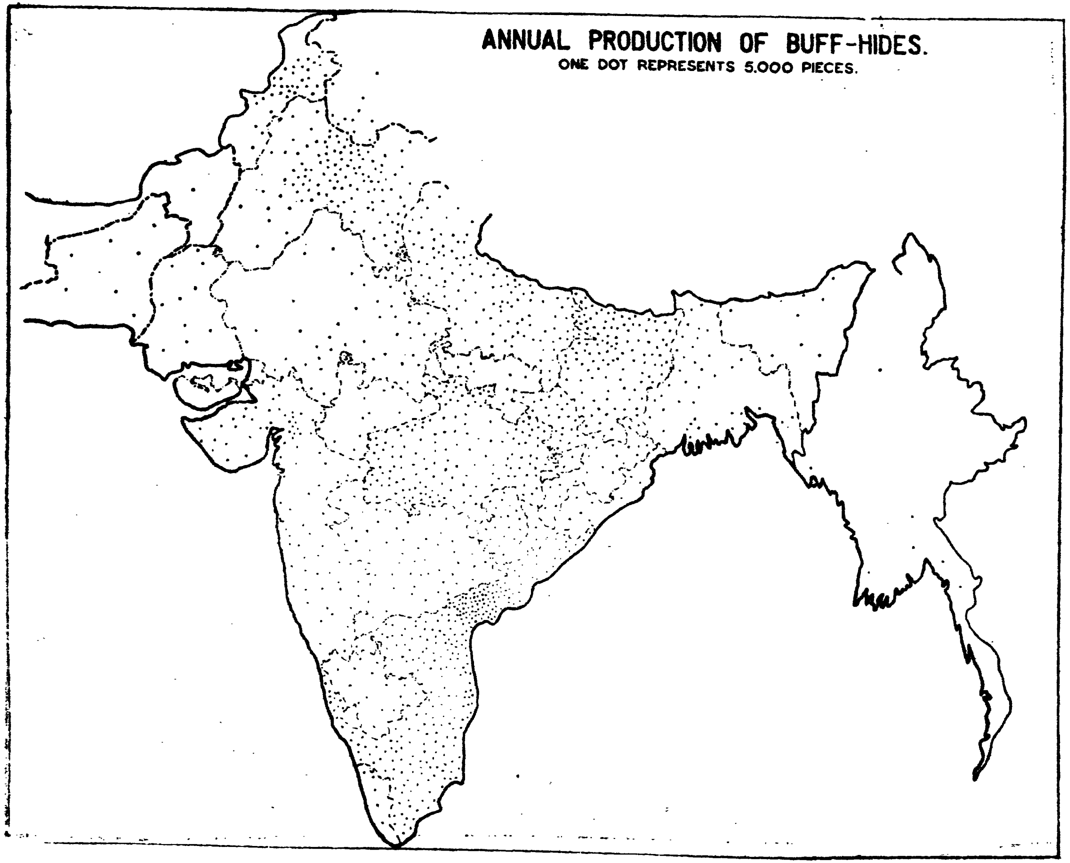
---

* The 1935 cattle census did not cover all the areas. For the uncovered areas, therefore, necessary adjustments were made.



ANNUAL PRODUCTION OF KIPS.

ONE DOT REPRESENTS 5,000 PIECES.



ANNUAL PRODUCTION OF BUFF-HIDES.

ONE DOT REPRESENTS 5,000 PIECES.

(3) PRODUCTION OF BUFF HIDES (HIDES OF BUFFALOES AND OF THEIR YOUNG STOCK).

Buffalo hides are a class by themselves. In the trade they are also known as buff hides and buffs. In this report they are styled throughout as buff hides and include the skins of buffalo calves or *katras*.

Buffaloes represent only about 28 per cent of the number of cattle in the country and consequently production of buff hides is small compared with the kips. The number of buff hides produced in the various parts of India and in Burma is given in the table below along with the corresponding buffalo populations.

Annual production of buff hides.

———	Annual production (lakhs).			Percentage of Indian production.	Buffalo population. (1935). (lakhs).	Percentage of buff hides to buffalo population.
	Fallen.	Slaughtered.	Total.			
North-West Frontier Province including Agency and Tribal areas ..	..	1·8	1·8	3·1	5·7	31·6
Punjab	3·3	1·6	4·9	8·6	60·5	8·1
Rajputana	1·9	..	1·9	3·3	42·4	4·5
Central India States ..	0·7	..	0·7	1·2	10·7	6·5
Sind	0·4	..	0·4	0·7	5·5	7·3
Kathiawar, Gujarat and Baroda States	1·3	..	1·3	2·4	15·7	8·3
Bombay Province including States	2·3	0·4	2·7	4·7	29·1	9·3
Mysore State	0·2	0·6	0·8	1·4	9·4	8·5
Madras Province	11·8	3·3	15·1	26·4	54·3	27·8
Hyderabad State	2·2	..	2·2	3·9	30·9	7·1
Central Provinces	6·2	0·2	6·4	11·3	21·9	29·2
Central Provinces and Eastern States	3·0	..	3·0	5·2	11·8	25·4
United Provinces including States	3·7	1·9	5·6	9·8	95·3	5·9
Bihar	3·2	2·0	5·2	9·1	35·5	14·6
Orissa	0·4	0·2	0·6	1·0	3·8	15·8
Bengal	1·2	0·5	1·7	3·0	9·9	17·2
Assam	0·4	..	0·4	0·7	5·3	7·5
Others*	1·6	0·8	2·4	4·2	27·8	8·6
India	43·8	13·3	57·1	(100)	475·5	12·0
Burma	0·6	*Neg.*	0·6	..	10·2	5·9

**Kashmir State, British Baluchistan, Baluchistan States, Punjab States, Delhi Province, Cochin State, Travancore State, Coorg, Bundelkhand Agency States, Bengal* and *Assam States.*

The total production of buff hides in India is 57·1 lakhs as compared with 200·1 lakh kips. The proportion of slaughtered hides is about 23·3 per cent, against 27 per cent in the kips. The production varies considerably in different parts of the country and the reasons for it are generally the same as enumerated under kips. The distribution is shown on the map facing page 9 and the production in different provinces and States is graphically shown in the diagram facing this page. *Bengal,* which leads in the production of kips is surpassed by many other areas, in the output of buff hides. This is because of the negligible number of buffaloes. Instead, the *Madras Province,* which is the second largest producer of kips, tops the list in the production of buff hides. It accounts for over a fourth of the total Indian production, although the *Punjab* and the *United Provinces* have more buffaloes than the *Madras Province.* In this province, like the cattle, the buffaloes, too, are short-lived. The *Central Provinces,* the *United Provinces, Bihar* and the *Punjab* contribute 11·3, 9·8, 9·1 and 8·6 per cent respectively. In other areas, the local production of buff hides is under 5 per cent of the total for the country. *Rajputana* and the *United Provinces* including the States are relatively unimportant for buff hide production, in relation to their buffalo population.

The production of buff hides in Burma is insignificant and is only 5·9 per cent of the buffalo population in that country. Most of the buff hides are of the fallen type.

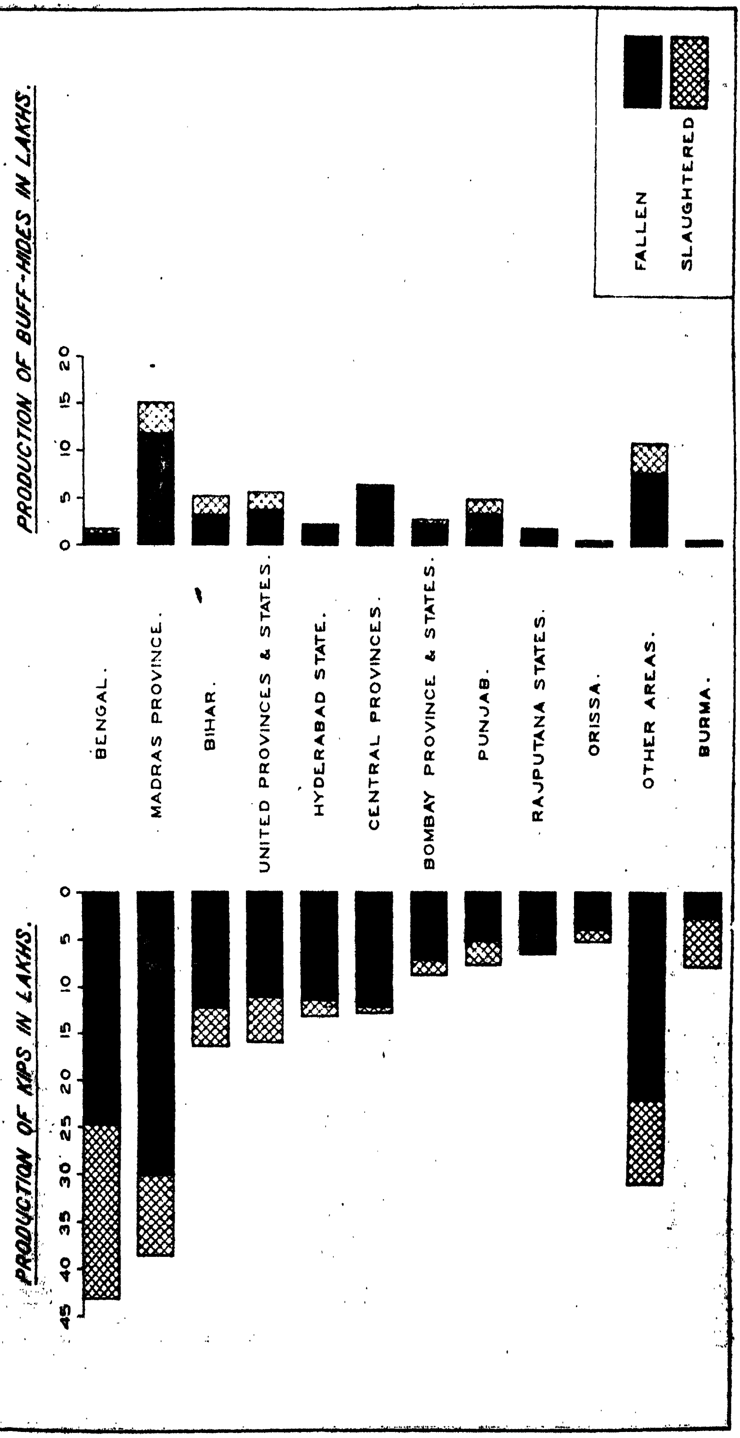
(4) SUMMARY OF INDIAN PRODUCTION.

The number of kips and buff hides produced in India is given in the table below :—

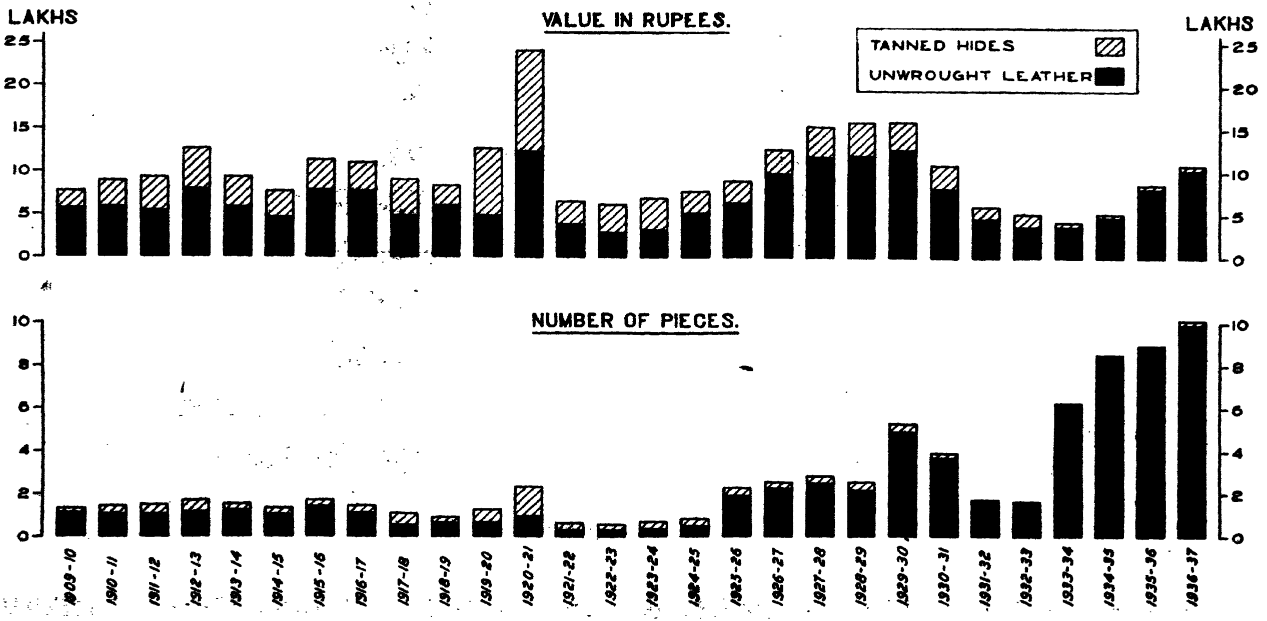
Annual production of Indian hides.

Type.	Annual production (lakhs).			Percentage to total Indian production.	Number of animals (lakhs).	Percentage of hides to animal population.
	Fallen.	Slaughtered.	Total.			
Kips	147·4	52·7	200·1	78	1,760	11·4
Percentage	(73)	(27)	(100)			
Buff hides	43·8	13·3	57·1	22	475	12·0
Percentage	(77)	(23)	(100)			
Total ..	191·2	66·0	257·2	(100)	2,235	11·15
Percentage	(74)	(26)	(100)			

ANNUAL PRODUCTION OF KIPS & BUFF-HIDES IN DIFFERENT PARTS OF INDIA.



QUANTITY & VALUE OF ANNUAL IMPORTS OF TANNED HIDES & UNWROUGHT LEATHER INTO INDIA & BURMA FOR 28 YEARS ENDING 1936-37.



The total production of hides in India is estimated at 257·2 lakh pieces. Kips comprise 78 per cent and buff hides 22 per cent of the total production. The proportion of fallen hides is 74 per cent. The annual production of hides to total population of cattle and buffaloes works to 11·5 per cent. The value of the annual Indian output at a nominal price of Rs. 2 per kip and Rs. 3 per buff hide, amounts to approximately Rs. 6 crores or about £4,400,000.

Assuming that there are about 37 lakh horses, mules, donkeys and camels in India, the production of these hides may be taken at about 3 to 4 lakh pieces per annum. Most of these are of the fallen type, except in the case of a few camel hides, which may be of animals slaughtered on special occasions.

(5) SUMMARY OF BURMESE PRODUCTION.

The annual production of kips and buff hides in Burma is given in the table below:—

Annual production of hides in Burma.

Type.	Annual production. (lakhs).			Percentage to total Burmese production.	Number of animals (lakhs).	Percentage of hides to animal population.
	Fallen.	Slaughtered.	Total.			
Kips	2·7	5·2	7·9	93	51·2	15·4
Percentage	(34)	(66)	(100)			
Buff hides	0·6	*Neg.*	0·6	7	10·2	5·9
Total ..	3·3	5·2	8·5	(100)	61·4	13·8
Percentage	(39)	(61)	(100)			

The production is approximately 8·5 lakh hides per annum, most of which consist of kips. As much as 61 per cent of the Burmese hides are of the slaughtered type, against only 26 per cent of such hides in India. The value of the production at a nominal price of Rs. 2 per hide amounts to approximately Rs. 17 lakh per annum.

B.—Seasonal variations in production.

(1) FALLEN HIDES.

The seasonal variations in the production of fallen hides depend mostly on local conditions of the area concerned. Scarcity of fodder during certain months and its abundance in others are the main causes which influence cattle mortality. Famine conditions or outbreak of epidemics amongst cattle account for more deaths, when these occur.

Unfortunately, no data are available in regard to the number of animals which die in a tract annually, much less according to the seasons. The deaths which occur from certain contagious diseases are recorded in some areas but these comprise only a small fraction of the total number of cattle dying during the course of a year. They do not, therefore, give a correct indication about the periodicity of production.

Enquiries made during the course of the survey, however, show that generally the production of fallen hides is minimum during the early part of the year, *i.e.*, between January and March, but gradually rises during summer and is at its peak during the monsoon, *viz.*, in July/August. The increase in summer is due to the general scarcity of fodder and water in several parts. In the beginning of the rainy season, the grazing improves but the animals, which are reduced previously to a semi-starved condition, somehow or other do not respond and die in large numbers. Eating of poisonous plants and rank grass in larger quantities also causes deaths during this part of the year. The floods too add to the miseries of the cattle to some extent. Consequently, the production of fallen hides shows marked increase from July to September. The recorded figures of mortality amongst oxen and buffaloes in the *Drug* and *Raipur* Districts of the *Central Provinces* also confirm this, although the data are comparatively insignificant.

Monthly deaths amongst cattle and buffaloes in the Drug and Raipur Districts.

(Figures relate to 1931 to 1935).

Month.	Number dead.	Percentage to annual deaths.	Month.	Number dead.	Percentage to annual deaths.
January	7,925	8·9	July ..	9,196	10·3
February ..	7,089	7·9	August ..	9,450	10·6
March	6,109	6·8	September ..	8,519	9·5
April	5,890	6·6	October ..	7,206	8·0
May	6,362	7·1	November ..	6,879	7·7
June	7,925	8·8	December ..	7,005	7·8
			Total ..	89,555	(100)

It is observed that the death rate is low from March to May and is high from July to September.

(2) SLAUGHTERED HIDES.

The seasonal variations in the production of these hides depend mainly on the demand for beef. India is a tropical country and the consumption of beef during summer is less than in winter and the production of hides varies accordingly. Monthly figures of slaughter collected from some of the important slaughterhouses in the country are shown in the following table.

Monthly slaughter of cattle and buffaloes at certain slaughterhouses in India.*

Month.	Number slaughtered.	Percentage to annual slaughterings.	Month.	Number slaughtered.	Percentage to annual slaughterings.
January	31,941	8·9	July ..	29,202	8·2
February ..	27,070	7·6	August ..	30,018	8·4
March	26,360	7·4	September ..	29,695	8·3
April	26,009	7·3	October ..	35,341	9·9
May	26,247	7·3	November ..	34,328	9·6
June	27,627	7·7	December ..	33,684	9·4
			Total ..	357,522	(100)

It is seen that during the warmer months of April and May, the slaughterings are lowest and they begin to rise gradually thereafter. The maximum number is reached during October to December. They again begin to decline from January.

Besides the internal demand for more beef during winter, the dried jerked meat for export purposes is prepared exclusively during the cold and dry months of December to February. Nearly 60,000 maunds of dried meat is exported every year to Burma, mainly from *Agra*, *Saugor*, and *Delhi*. About 60,000 animals—mostly buffaloes—are estimated to be slaughtered for the purpose during the three months. This also, to a small extent, influences the periodicity of production of slaughtered hides.

(3) SEASONAL VARIATIONS IN THE PRODUCTION OF SLAUGHTERED HIDES IN BURMA.

The figures of monthly slaughterings as ascertained from the Rangoon slaughterhouse are given in the following table.

Monthly slaughter of cattle and buffaloes in Rangoon.

Month.	Number slaughtered.	Percentage to annual slaughterings.	Month.	Number slaughtered.	Percentage to annual slaughterings.
January	3,009	6·8	July ..	4,375	9·8
February ..	3,287	7·4	August ..	3,850	8·7
March	4,275	9·6	September ..	3,221	7·2
April	4,392	9·9	October ..	3,033	6·7
May	4,496	10·1	November ..	2,945	6·6
June	4,681	10·5	December ..	2,958	6·7
			Total ..	44,522	(100)

**Tangra* (*Calcutta*), *Bandra* (*Bombay*), *Delhi*, *Matiabruz* (*Bengal*), *Bangalore*, *Moradabad*, *Peshawar*, *Madras*, *Karachi*, *Lahore* and *Jubbulpore*.

It is observed that in direct contrast to the conditions in Indian cities, the number of animals slaughtered in Rangoon during winter season—September to February—are much less than those killed during the remaining six months. It is stated that during winter, abundant supplies of fish and eggs are available at a relatively cheaper price than beef and this accounts for decreased killing of cattle for food purposes.

C.—Trend of production.

Data of year to year production of hides in India are not available. In 1928-29 the Hide Cess Committee examined several previous estimates, but it did not hazard an estimate of the production even for that year. It merely concluded that the production did not exceed 250 lakh pieces per annum. One of the estimates the Committee took into account in arriving at the above figure was that published by Arnold in 1925. This is reproduced below :—

*Arnold's estimates of annual production of hides in India.**

Period.	High year of each period. (lakhs).	Low year of each period. (lakhs).
Pre-War (prior to 1914)	219·5	201·5
War-time (1914—18)	221·5	167·0
Post-War	252·5	157·0

It is seen that the above estimates vary from 157 lakhs to 252·5 lakhs per annum and according to this authority the lowest output was during the post-War period. The other estimates which the Committee examined varied from 120 to 300 lakh pieces per annum. It also observed that if the average life of cattle were taken as 6 years, the production of hides would be 305 lakh pieces per annum assuming that there were 1,830 lakh cattle and buffaloes in the country. If the average life were taken as 4 years, the annual production of hides would be 458 lakh pieces.

The above series of figures show that opinion regarding the annual production of hides differs greatly and it would be erroneous to use any one of them for judging the trend. They, however, generally correspond with the production estimated in this report, *viz.*, 257 lakh pieces per annum. With a view to having a general indication about the trend of production, long range figures of cattle population in India may be examined. The table below gives the number of cattle and buffaloes in 1920 and 1935, in common tracts covered by the cattle census.

Trend of cattle population in certain areas.†

——	Number in 1920. (lakhs).	Number in 1935. (lakhs).	Percentage increase.
Total cattle and buffaloes, including their young stock	1,177·6	1,330·1	12·95

---

*"Hides and Skins" by Arnold (1925).

†All areas except *Bengal Bihar Orissa* and some of the major Indian States.

The preceding figures show that during the 15 years under review the Indian cattle have increased by about 13 per cent. It may, therefore, be said that the Indian production of hides has also increased in the same proportion during the 15 years period ending 1935. But there are other causes too, which might influence the trend, either from year to year or over a long period. These are (*i*) the ravages of occasional famines which take a heavy toll of cattle life, (*ii*) the activities of veterinary departments which prevent or cure cattle of diseases and thereby reduce deaths in the stock, and (*iii*) the increase or decrease in the killing of cattle for food.

(1) EFFECTS OF FAMINE.

As most of the cattle in the villages depend on grazing or on straw obtained as by-products of certain crops, long draughts or famine conditions severely influence the availability of fodder, etc., and consequently cattle mortality.

During the last 75 years or so, there were two or three severe famines (in 1872, 1899 and 1905) which adversely affected, both human beings and cattle. The Government had to appoint special commissions for organising relief measures. Data on the increase of cattle mortality due to famines are not available but their effect can be judged (see table below) to some extent by the abnormal increase in the number of hides exported from India during the years of famine and those which followed.

Exports of raw hides from India during famine and other years.

(Lakhs).

Year.	Number of pieces.	Year.	Number of pieces.
*1872-73	88	1901-02	78
1875-76	58	1904-05	81
1898-99	80	*1905-06	108
*1899-1900	137	*1906-07	125
*1900-01	147	1907-08	78

*Famine years.

It is noticed that the number of hides exported during the famine years has, at times, been twice as much as that exported in a normal year and this can be explained as the result of increased cattle deaths through starvation. Fortunately, there have been no severe or widespread famines since 1906, although at times regional famines have occurred. For instance, between 1937 and 1939 there was continuous failure of rains in parts of North India (*Hissar* tract), *Gujarat* and *Kathiawar*. But the relief measures adopted were, perhaps, much better organised than those in the past. Some of the measures taken by the provincial and Indian State governments were to arrange for moving the cattle in large numbers to other suitable tracts, to open up new grazing areas in the reserve forests, to establish depots for supplying fodder at cheaper rates, to take over the villagers' cattle and maintain them during famine at a nominal charge, etc. Grass and other fodder were purchased and brought from distant areas by the governments concerned, at a considerable cost to them. The result of these measures was that although the death rate was higher there was no spectacular increase in the production of fallen hides.

(2) VETERINARY ACTIVITIES TO COMBAT DEATHS IN CATTLE.*

During the last 15 or 20 years, a civil veterinary department has been established in every province and most of the major Indian States. The gross expenditure on these departments (central, provincial and Indian States) in 1936-37 was approximately Rs. 82 lakh. In 1930-31, there were 1,132 veterinary hospitals and dispensaries in India including those in the Indian States. In 1937-38, the number increased to 1,335 hospitals. This means that there was only one hospital or dispensary per 1·8 lakh cattle and buffaloes. The number of goats, sheep, horses and other livestock is extra. In the same year, approximately 65 lakh cases were treated at the hospitals and on tour, which means that less than 3 per cent of the cattle and buffaloes only received some veterinary aid.

The table below shows the reported mortality from contagious diseases amongst cattle in the British provinces during the 10 years, ending 1937-38.

Trend of contagious diseases and their control in the provinces.

——	Reported mortality from contagious diseases. (Lakhs).	Number of preventive inoculations. (lakhs).
1928-29	3·7	19·0
1929-30	4·2	20·3
1930-31	3·2	15·1
1931-32	2·7	15·8
1932-33	3·0	17·3
1933-34	2·9	22·3
1934-35	2·2	24·4
1935-36	2·3	31·4
1936-37	2·8	44·4
1937-38	2·4	48·5

---

*Abstracts from "Review of Agricultural Operations in India", 1932-33, and "Agriculture and Animal Husbandry in India", 1936-37.

It is not known what relation the figures in column (2) bear to the total mortality in India from contagious diseases in the course of a year, but they show a decrease in deaths by about 1 lakh per annum during the period under review. Since, however, the production of fallen hides is over 191 lakhs per annum, such small decrease or increase can as yet hardly affect the trend. The preventive inoculations made each year are also progressively increasing but as yet they cover only about 3 per cent of the 1,500 lakh cattle, which the provinces alone possess. The cattle in the Indian States are extra. Further, it is reported that India spends only about ½ anna per annum per head of its cattle, on matters relating to animal husbandry or cattle welfare, compared with more than Re. 1 per head in some of the other countries, *e.g.*, the United States of America.

In the circumstances, much cannot be expected to be achieved by the veterinary departments in their present state in reducing the preventable deaths in cattle. It may, therefore, be concluded that these activities generally have not affected to any appreciable extent the trend of fallen hide production in this country, say, during the last 20 years, by reducing the number of deaths in cattle.

(3) TREND OF SLAUGHTERINGS.

Long range figures are not available but the information collected in recent years shows that the number of animals killed for food is on the increase. The annual slaughterings in some of the important cities are shown in the table below :—

Number of cattle and buffaloes slaughtered at some of the important slaughter-houses.

—	Number slaughtered. (lakhs).	Increase over 1932-33. Percentage.	Cities.
1932-33	3·31	..	Agra, Bangalore, Bareilly, Bombay, Calcutta, Dacca, Delhi, Jubbulpore, Karachi, Lahore, Madras, Peshawar and Poona.
1933-34	3·33	0·6	
1934-35	3·61	9·1	
1935-36	3·73	12·7	
1936-37	3·90	17·8	
1937-38	4·01	21·2	

The production of slaughterhouse hides is thus definitely increasing and in appreciable quantities. As the beef prices are rather low (2 to 4 annas per seer), it pays to slaughter only old and unserviceable animals, which can be had cheaply, except under special circumstances when young animals may also be slaughtered. A large number of buffalo calves, not required to be reared for draught purposes, are also slaughtered

D.—Position of India in the world production of hides.

Information relating to the production of hides in other countries is not available but figures regarding the number of animals killed for food are published for all important countries except China. As most of the hides obtained abroad are of slaughtered type, the number of animals killed annually for food in a country may be taken to represent roughly the number of hides produced. The available figures, along with the cattle population, are given in the table below:—

*Production of slaughtered hides in different countries of the world.**

Country. (1)	Cattle Population. (lakhs). (2)	Annual production of hides. (lakhs). (3)	Percentage of hides to cattle population. (4)	Percentage of hide production to world total. (5)
Americas—				
United States of America ..	664	243	36·6	17·8
Canada	88	19	21·6	1·4
Argentina	309	60	19·4	4·4
Brazil	405	42	10·4	3·1
Other South American countries (*a*)	347	39	11·2	2·9
				29·6
Europe—				
U. S. S. R.	565	247	43·7	18·1
Germany	201	83	41·3	6·1
France	158	77	48·7	5·7
Poland	101	35	34·7	2·6
Italy	72	30	41·7	2·2
United Kingdom	86	29	33·7	2·1
Other European countries(*b*)	458	118	25·8	8·7
				45·5
Australia	139	25	18·0	1·8
New Zealand	43	14	32·6	1·0
Africa (*c*)	227	21	9·2	1·5
Asia—				
Other Asiatic countries (*d*)	118	17	14·4	1·2
ndia	2,235(*e*)	257(*f*)	11·5	18·8
Burma	61	8	13·1	0·6
				24·9
Total ..	6,277	1,364	21·7	(100)

---

*Abstracted from "Statistical Year Book of the League of Nations" 1937-38 and the "Leather Trades' Year Book", 1937.

(*a*) Cuba, Mexico, Chile, Columbia, Peru and Uruguay, (*b*) Austria, Belgium, Bulgaria, Denmark, Spain, Estonia, Finland, Hungary, Ireland, Latvia, Lithuania, Norway, Netherlands, Portugal, Rumania, Sweden, Switzerland, Czechoslovakia and Yugoslavia, (c) Algeria, Egypt, Madagascar, Morocco (Fr.), S. Rhodesia, Tunis and Union of South Africa, (*d*) Korea, Formosa, Indo-China, Japan, Palestine and Philippines, (*e*) 1,760 lakh cattle and 475 lakh buffaloes and (*f*) 200 lakh kips and 57 lakh buff hides. The number includes fallen hides also.

It is seen from column (4) that in most of the countries, the proportion of hides produced or the number of animals killed annually to the total cattle population, is quite appreciable. In France, for instance, it is as high as 48·7 per cent and in the case of the United Kingdom also it is over 33 per cent. In the case of India, where killing of cattle for food is not so pronounced, the annual hide production, inclusive of fallen hides, represents only 11·5 per cent of the cattle and buffalo population. This explains why India, which possesses a third of the world's cattle and buffaloes, produces only 18·8 per cent of the hides produced in the reporting countries of the world.

The position of India should not, however, be judged merely on the basis of the number of hides produced per annum. A large proportion of the Indian hides are of light weight (kips) and that enables this country to influence the foreign markets for kips to a much greater extent, than her share of world's total production of hides would. It is further claimed that Indian hides possess certain tanning qualities, which are not found in hides produced in other countries.*

E.—Imports of hides and leather into India.†

In view of the enormous local production which gives scope for a large export trade, it is only natural that the imports of hides and leather in India are comparatively small.

At present, the statistics regarding the imports and exports of hides and leather are classified under three main groups, *viz.*, (*i*) Raw hides, (*ii*) Tanned or dressed hides and (*iii*) Unwrought leather. The term raw hides covers wet-salted, dry-salted and air-dried hides. These are the names given to raw hides which are preserved temporarily by different methods to prevent putrefaction until they reach the tanner. Vegetable tanned hides are termed as tanned or dressed hides. In the export trade these are, however, often called half-tanned. This is a somewhat misleading term, since the material is really tanned but not finished. The subject is further discussed in the next chapter. Chrome tanned box or willow sides leather, generally used for making the uppers of boots and shoes and other light goods, is called unwrought leather.

(1) TOTAL IMPORTS.

Imports of hides and leather, although small, are on the increase, quantitatively but not in value. In the year 1938-39 approximately 10 lakh pieces of raw hides and about 18 lakh pieces of unwrought leather, with negligible quantities of tanned or dressed hides, were imported into India. Thus the total imports (28 lakh pieces) represent about 10 per cent of the annual production of 257 lakh pieces of hides. The value of the imports was approximately Rs. 24 lakhs in that year.

---

*Report of the Hide Cess Enquiry Committee.

†In dealing with the import and export trade of India and Burma, it has not been always possible to define them separately. Until 1937 most of the figures were maintained in a combined form, and thereafter only a few series are available separately for each country. In view of this, at places, the matter has been treated jointly for both the countries, but wherever possible the share of Burma has been indicated separately.

Long range figures of imports of raw hides are available only by the sea route. As about 75 per cent of the imports are by the land frontier routes, combined figures for overland and sea-borne trades are given in the table below for only 10 years ending 1938-39, the period for which they are available.

Imports of raw hides and leather into India (including the quantity received from Burma).

—	Raw hides.		Unwrought leather.		Tanned or dressed hides.		Total.	
	Tons.	Pieces.* (lakhs.)	Tons.	Pieces*. (lakhs).	Tons.	Pieces.* (lakhs).	Pieces. (lakhs).	Value. (lakhs).
								Rs.
1929-30	5,916	11·9	669	4·98	106	·34	17·22	47·48
1930-31	4,489	9·2	501	3·73	73	·23	13·16	30·05
1931-32	3,991	7·0	215	1·60	52	·17	8·77	23·21
1932-33	3,972	7·9	198	1·48	32	·10	9·48	19·36
1933-34	4,845	9·8	823	6·13	19	·06	15·99	21·72
1934-35	4,501	9·4	1,128	8·40	22	·07	17·87	21·46
1935-36	4,574	9·5	1,187	8·84	4	·01	18·35	24·90
1936-37	5,123	10·8	1,131	8·43	55	·18	19·41	29·98
1937-38	5,285	11·2	1,629	12·14	3	·01	23·35	27·11
1938-39	4,536	9·6	2,411	17·96	2	·01	27·57	23·63

It is noticed that except during 1931-32 and 1932-33, the total number of pieces has steadily increased during the 10 years under review. But the value has dropped by about half of what it was at the beginning of the decade. The different items, namely, raw hides, unwrought leather and dressed hides are discussed below separately.

(2) RAW HIDES.

In the import trade returns, under the item "raw hides" particulars regarding kips and buff hides are not available, but enquiries show that most of the goods are kips with very few pieces of the latter type.

---

*Raw hides imported overland are taken at 230 pieces to a ton or about 10 lb. per piece. Those imported from other countries and Burma by sea are taken at 15 lb. per piece or 150 pieces to a ton. A piece of unwrought leather is taken to weigh lb. or 745 pieces to a ton. The weight of a piece of dressed hide is taken at 7 lb. or 320 pieces per ton.

(*a*) *Trend.*—The annual imports of raw hides into India through land frontier routes, British Indian ports and coastal routes for the 10 years ending 1938-39 are given in the table below :—

Trend of imports of raw hides (mostly kips) into India.

—	By land frontier routes.	By sea route.	By coastal route (from Burma).	Total.		Total value. (lakhs).	Cost per piece.
				Tons.	Pieces. (lakhs).		
	Tons.	Tons.	Tons.			Rs.	Rs. A.
1929-30 ..	3,724	771	1,421	5,916	11·9	32·0	2 11
1930-31 ..	3,096	510	883	4,489	9·2	19·5	2 2
1931-32 ..	2,550	779	662	3,991	7·0	17·2	2 7
1932-33 ..	2,453	702	817	3,972	7·9	14·4	1 13
1933-34 ..	3,153	869	823	4,845	9·8	17·7	1 13
1934-35 ..	3,323	650	528	4,501	9·4	17·0	1 13
1935-36 ..	3,323	559	692	4,574	9·5	17·0	1 13
1936-37 ..	3,854	522	747	5,123	10·8	19·7	1 13
1937-38 ..	4,121	775	389	5,285	11·2	20·5	1 13
1938-39 ..	3,448	1,088*	..	4,536	9·6	17·4	1 13

It is seen that the number of pieces has varied between 7 lakhs and 12 lakhs per annum. The value, on the other hand, has varied between Rs. 14·4 lakhs and Rs. 32 lakhs with the result that while there has not been much decrease in the quantity, the price per piece has been reduced from Rs. 2-11-0 in 1929-30 to Rs. 1-13-0 in 1938-39. It will be seen in a later section that during the five year period ending 1938-39, the value of raw hides exported from India was Rs. 2-6-0 per piece. This would indicate that the quality of Indian imports particularly those arriving by the land frontier routes is cheaper and inferior, to what the country exports.

---

*Including quantities received by coastal route from Burma.

(*b*) *Periodicity of imports.*—The monthly variations in the quantities of hides received through land frontier routes and those received by sea are slightly different and are shown separately in the table below :—

Monthly imports of raw hides by land frontier and sea routes.

(Average for 5 years ending 1938-39).

Month.	By land routes.		By sea routes.	
	Tons.	Percentage to annual total.	Tons.	Percentage to annual total.
January	444	12·3	100	12·6
February	371	10·3	83	10·4
March	386	10·7	74	9·3
April	307	8·5	50	6·3
May	252	7·0	78	9·8
June	196	5·4	51	6·4
July	190	5·3	73	9·2
August	186	5·1	57	7·1
September	251	6·9	58	7·3
October	290	8·0	57	7·1
November	331	9·2	51	6·4
December	407	11·3	64	8·1
Total ..	3,611	(100)	796	(100)

It is observed that imports, both by the land and sea routes, are high during the winter months, *i.e.*, from December to March. The imports by land decline during the warmer months and touch the minimum during the hottest part of the year, *i.e.*, from June to August. The reason is that the hides have often to be transported over long distances and this cannot be done properly during the summer. The imports by sea during months, other than of winter, vary rather erratically. The quantities imported each month by sea are, however, small and may be influenced by several factors, *e.g.*, shipping facilities, etc.

(*c*) *Sources.*—The bulk of the import of raw hides comes from the north-western countries adjoining India, mainly Afghanistan and beyond. Hides are received from Nepal, Bhutan and Sikkim also. In some cases the hides may be transported overland for long distances. There is a constant land frontier trade between India and the adjoining countries in several commodities including hides. The traders, who bring the hides and other articles on pack animals, carry, on their way back, commodities which are required in their countries.

The sea-borne trade which accounts for about 13 per cent of the total imports in raw hides is mostly from Ceylon, Siam and Indo-China. Most of these hides come into India through *Madras*. It is, however, observed that the hides received through sea-borne trade are slightly heavier and superior and the average cost in late years has been Rs. 2-8-0 per piece against only Rs. 1-11-0 per piece of hide received from land frontier countries. By the coastal route India gets hides only from Burma and they comprise about 12 per cent of the total raw hide imports.

(3) UNWROUGHT LEATHER.

Unwrought leather mainly consists of chrome tanned box or willow sides and calf skins used for making uppers of boots and shoes, generally of English pattern, as distinct from shoes of the native style This leather is sold mainly on measurement (per sq. ft.) basis.

(*a*) *Trend.*—The table below deals with the imports of unwrought leather for 30 years ending 1938-39.

*Imports of unwrought leather into India.**

Quinquennium ending.	Quantity.†		Value. (lakhs).	Price per piece.	Price per sq. ft.
	Tons.	Pieces. (lakhs).			
			Rs.	Rs. A.	A. P.
1913-14	152	1·13	6·12	5 7	5 5
1918-19	131	0·98	6·16	6 5	6 4
1923-24	69	0·51	5·48	10 12	10 9
1928-29	253	1·88	9·06	4 13	4 10
1933-34	482	3·59	6·53	1 13	1 10
1938-39	1,537	11·50	6·66	0 9	0 7

*The figures include quantities imported into Burma from countries other than India but the share of the latter country was negligible.

†One piece is taken to weigh 3 lb. and to measure 16 sq. ft.

The above figures and the diagram facing page 11 show that in recent years the imports of unwrought leather have increased in quantity by more than 10 times what they were a quarter of a century ago. Previously, the import price was very high and during the quinquennium ending 1923-24, it was Rs. 10-12-0 per piece or about 11 annas per sq. ft. But since then it has fallen considerably and the figures show that during the five years ending 1938-39, it was as low as only 9 annas per piece or about 7 pies per sq. ft. There is a general impression that

India imports mostly superior type of chrome and other fancy leathers, *e.g.*, patent leather, etc., which the country cannot make itself. But looking to the recorded prices at which the leather was imported in recent years, namely, 9 annas per piece, there appears to be little truth in the assumption. Enquiries show that lately large quantities of cheap type of leathers consisting mainly of bark tanned and chrome tanned splits were imported into this country chiefly from England, for making of composit washers for the cotton ginning mills.

(*b*) *Periodicity of imports.*—The monthly imports of unwrought leather are shown in the following table.

Monthly imports of unwrought leather.

(Average for 5 years ending 1936-37.)

Month.	Quantity. (tons).	Percentage to annual total.
January	101	10·7
February	60	6·4
March	97	10·3
April	69	7·3
May	68	7·2
June	70	7·4
July	74	7·9
August	93	9·9
September	89	9·4
October	57	6·0
November	90	9·5
December	75	8·0
Total	943	(100)

During the months of January, March, August, September and November, imports of unwrought leather are comparatively high. This may be taken to synchronize with the general demand for boots and shoes which usually increases during the winter and autumn months.

(c) *Sources.*—The shares of the different countries from which unwrought leather was imported into India during the five year period ending 1937-38 is given below :—

Shares of different countries in the imports of unwrought leather into India.

(Average for 5 years ending 1937-38).

Country.	Percentage to total.	
	Quantity.	Value.
United Kingdom	64·7	44·2
Other Empire countries	2·3	1·1
United States of America	24·3	31·8
Germany	7·5	18·2
Other foreign countries	1·2	4·7
	(100)	(100)

Almost two-thirds of the quantity of unwrought leather is imported from the United Kingdom. But it is of a cheaper type, as is seen from the value of this share which represents only about 44 per cent of the total. About a quarter of the supply is received from the United States of America but as a greater part of this is patent leather, its value represents nearly 32 per cent of the total. From Germany only 7·5 per cent of the quantity is received but for this as much as 18·2 per cent of the value is paid, which may account for the special or expensive type of leather received from that country. There is no import trade across the land frontier.

(4) TANNED OR DRESSED HIDES.

Since India itself is a large exporter of dressed hides, imports of this type are unimportant. The annual average for five years ending 1937-38 has been only about 20 tons or 6,400 pieces valued at about Rs. 50,000. Fifteen years ago, however, the imports were larger and during the quinquennium ending 1924-25, about 158 tons of dressed hides were imported per annum.

The United Kingdom, the United States of America, Ceylon and Burma are the sources for the supply of dressed hides, in order of their importance.

F.—Imports of hides and leather into Burma.

The production of hides in Burma is approximately 8 lakh pieces per annum. Lately, the combined imports of raw and dressed hides and of unwrought leather have been about 1·8 lakh pieces per annum or about 22 per cent of the local production.

(1) RAW HIDES.

In the imports, the share of raw hides is comparatively small. Imports for 8 years beginning with 1929-30 are shown below. Figures for the overland trade in previous years are not available.

Imports of raw hides into Burma.

—	Quantity.		Value. (lakhs).	Price per piece.
	Tons.	Pieces*. (thousand).		
			Rs.	Rs. A.
1929-30	329	49	2·00	4 1
1930-31	242	36	1·41	3 15
1931-32	232	35	1·35	3 14
1932-33	108	16	0·65	4 1
1933-34	176	26	1·02	3 15
1934-35	190	29	1·10	3 13
1935-36	257	39	1·50	3 14
1936-37	251	38	1·40	3 11

The above shows that the annual quantities imported have fluctuated rather abruptly in some years. The price per piece has, however, remained steady and the difference between the highest and lowest range has been only 6 annas per piece. Monthly figures of imports are not available.

Almost the whole stock is received from the adjoining countries of Siam, Indo-China and north-eastern States, through the land frontier route. Only a few hides are sometimes received from India.

(2) DRESSED HIDES AND UNWROUGHT LEATHER.

Imports of these are more important than of raw hides. In recent years about Rs. 5 lakhs worth of dressed hides and unwrought leather are being imported into Burma. In this case separate figures from 1920-21 are available, but for the 5 year period between 1932-33 and

---

*Converted on the basis of 15 lb. per piece or about 150 pieces per ton.

1936-37 (both years inclusive) the figures of dressed hides and unwrought leather have been combined in the trade statistics with those of dressed skins and other leather. Therefore, in the table, these have been omitted and the rest of the figures are given

Imports of dressed hides and unwrought leather into Burma.

—	Dressed hides.		Unwrought leather.		Total.	
	Tons.	Pieces*. (lakhs).	Tons.	Pieces†. (lakhs).	Pieces.	Value. (lakhs).
						Rs.
1920-21 ..	7	0·06	19	0·14	0·20	1·47
1921-22 ..	38	0·35	50	0·37	0·72	3·71
1922-23 ..	45	0·42	14	0·10	0·52	2·88
1923-24 ..	63	0·58	25	0·19	0·77	3·58
1924-25 ..	78	0·72	4	0·03	0·75	3·75
1925-26 ..	102	0·95	4	0·03	0·98	4·38
1926-27 ..	66	0·61	8	0·06	0·67	3·39
1927-28 ..	93	0·86	2	0·02	0·88	4·20
1928-29 ..	79	0·73	1	0·01	0·74	3·73
1929-30 ..	80	0·74	25	0·19	0·93	4·10
1930-31 ..	48	0·44	18	0·13	0·57	2·10
1931-32 ..	59	0·55	44	0·33	0·88	3·04
1937-38 ..	117	1·08	31	0·23	1·31	4·23
1938-39 ..	6	0·06	187	1·39	1·45	4·91

*At 927 pieces per ton or about 2¼ lb. per piece. This figure has been adopted from the Burma Trade Journal in which both the quantity and the numbers, are given for the 2 years ending 1938-39.

†At 745 pieces per ton or about 3 lb. per piece.

The figures of imports of dressed hides show that they have had an erratic course. Even recently, *i.e.*, in 1937-38 about 117 tons were imported but during the following year the quantity dropped to 6 tons. The imports of unwrought leather and their annual values have had even a greater tendency to fluctuate sharply.

Over 82 per cent of the unwrought leather and 90 per cent of the dressed hides are imported from India through the coastal route. The weight per piece indicates that the dressed goods consist mainly of calf skins or of light weight kips. The remaining quantities are obtained from the same countries from which India receives these goods. Monthly figures to show the periodicity are not available.

G.—Exports of hides and leather from India and Burma.

The first attempts to export Indian hides were made by the Dutch as early as in 1644 A. D. or about 300 years ago. The trade at that time was small and even in 1830 only about one lakh hides were exported from *Calcutta* to North America and Great Britain. Thereafter, the shipments increased steadily and from 1850 onwards the quantities exported are being recorded. In that year, *Bengal* exported about 44 lakh hides and an equal number of skins.

(1) TOTAL EXPORTS.

As an exporter of hides, India has had the dual advantage of putting in the world markets specially light cattle hides called kips in much larger quantities than any other country. In the line of buff hides, she is one of the main sources of production for in no other country are buffaloes found in such large numbers.

The exports of hides and leather from India are mainly by sea. The quinquennial averages of sea-borne exports from India and Burma for the 30 years ending 1938-39 are given in the following table. The annual figures of export, both quantity and value, for the same period and under the three groups are graphically shown in the diagram facing this page.

Total exports from India and Burma (1909-10 to 1938-39).

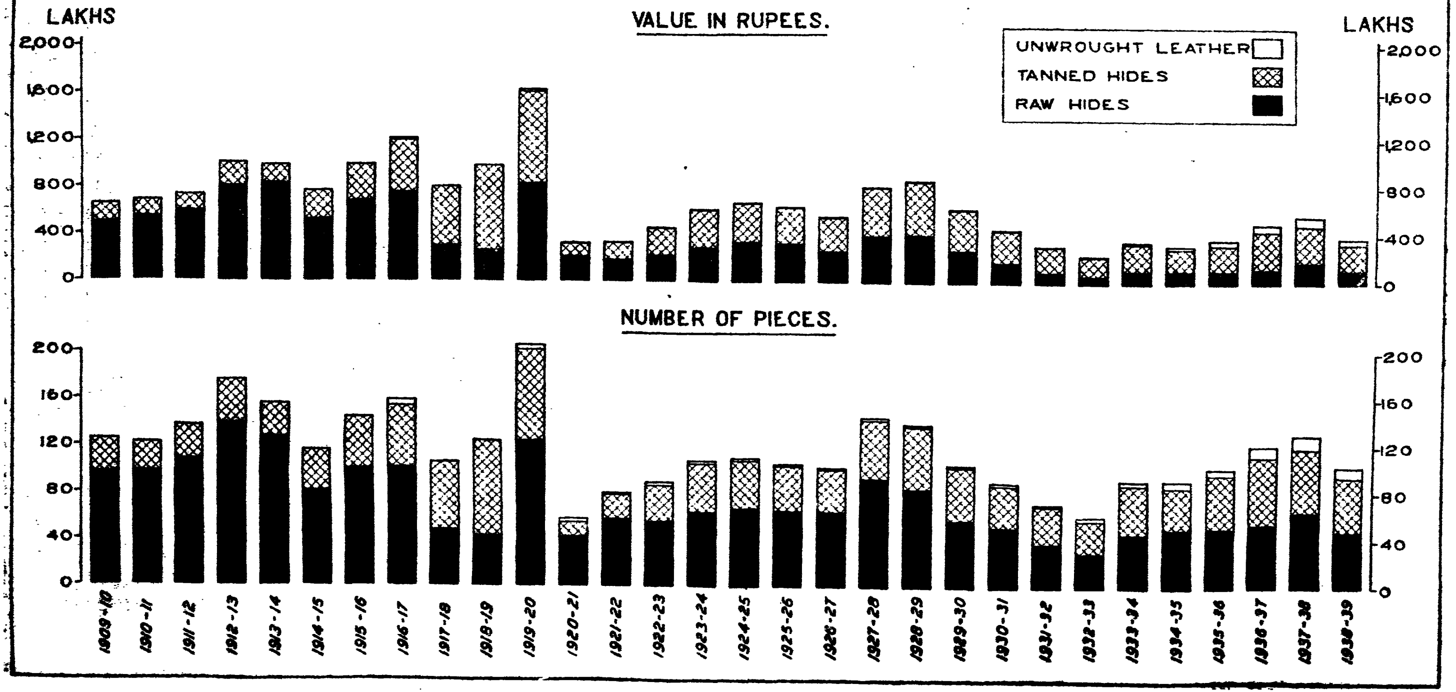
Quinquennium ending.	Raw hides.		Tanned hides.		Unwrought leather.		Total.	
	Tons. (thousand).	Pieces*. (lakhs).	Tons. (thousand).	Pieces*. (lakhs.)	Tons. (thousand).	Pieces*. (lakhs).	Pieces. (lakhs).	Value. (lakhs).
1913-14	49·6	114·1	9·1	29·1	0·04	0·3	143·5	Rs. 818
1918-19	32·9	75·7	16·9	54·1	0·18	1·3	131·1	948
1923-24	30·1	69·2	11·5	36·8	0·33	2·5	108·5	671
1928-29	32·7	75·2	13·7	43·8	0·23	1·7	120·7	704
1933-34	19·6	45·1	11·7	37·4	0·25	1·9	84·4	394
1938-39	23·8	54·7	15·0	48·0	1·13	8·4	111·1	435

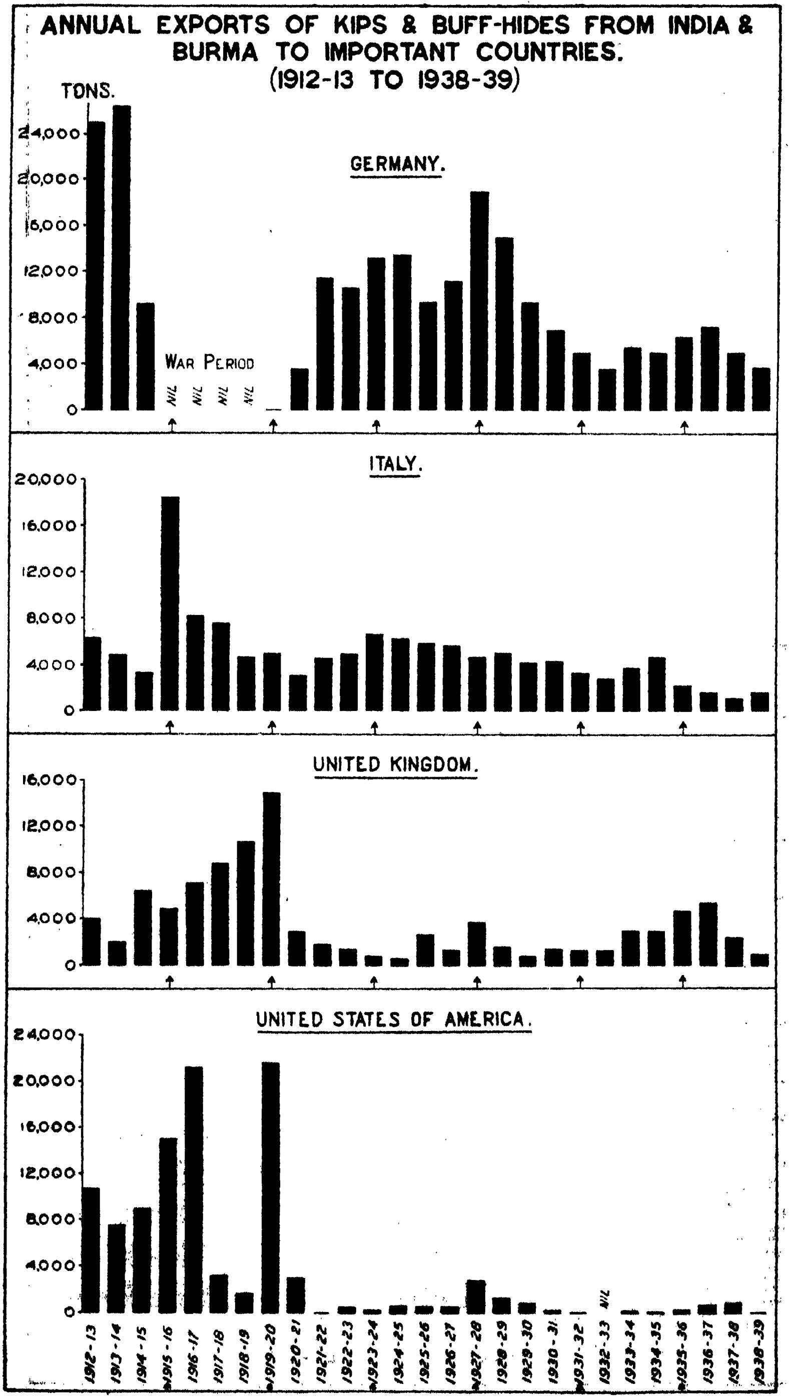
It is observed that compared with the figures for the quinquennium immediately preceding the Great War (1914) the exports on the whole have declined. The lowest limit was touched during the period of the world-wide economic depression, *i.e.*, during the five years ending 1933-34. There is an improvement in the figures for the period ending 1938-39. The total exports during this quinquennium amounted to a little over 11 million pieces valued at about Rs. 4·35 crores.

---

* Number of pieces has been calculated at 230 per ton in case of raw hides, 320 for tanned hides and 745 for unwrought leather.

QUANTITY & VALUE OF ANNUAL EXPORTS OF RAW & TANNED HIDES & OF UNWROUGHT LEATHER, FROM INDIA & BURMA BY SEA FOR 30 YEARS ENDING 1938-39.





ANNUAL EXPORTS OF KIPS & BUFF-HIDES FROM INDIA & BURMA TO IMPORTANT COUNTRIES.
(1912-13 TO 1938-39)

The decline is confined mainly to the raw hide trade. The exports of tanned hides and of unwrought leather have in fact improved during recent years. Prior to the Great War (1914) the trade in tanned hides was very small compared with that in raw hides. It received considerable encouragement during that War and has since maintained itself. During the quinquennium ending 1938-39 it was equivalent to about 70 per cent of the quantity of raw hides exported from this country. Being a processed commodity, it far exceeded the raw hide trade in value.

Some 30 years ago the exports of unwrought leather were practically negligible but on account of the development of chrome tanning in India during the last decade or so, this trade is also now assuming considerable importance. From about 35,000 pieces during the five years ending 1913-14, the exports of unwrought leather in recent years have increased to 8·4 lakh pieces per annum.

(2) EXPORTS OF RAW HIDES.

The exports of raw hides are almost entirely sea-borne there being practically no outward traffic by coastal or land frontier routes. For the quinquennium ending 1938-39 the exports consisted of 82·5 per cent kips, 15·6 per cent buff hides and 1·7 per cent cow and buffalo calf skins. The exports of other types of hides were negligible and did not exceed 0·2 per cent. The quinquennial averages of the quantity and value of the sea-borne exports of all types of raw hides from India and Burma are given in the following table.

Exports of raw hides from India and Burma.

(1909-10 to 1938-39).

Quinquennium ending.	Pieces (lakhs).	Percentage* to total exports of hides and leather.	Total value (lakhs).	Percentage to total value of exports.	Value per piece.
			Rs.		Rs. A.
1913-14	114·1	79·5	657·4	80·4	5 12
1918-19	75·7	57·7	504·6	53·2	6 11
1923-24	69·2	63·8	341·8	50·9	4 15
1928-29	75·2	62·3	340·0	48·3	4 8
1933-34	45·1	53·4	140·8	35·8	3 2
1938-39	54·7	49·2	130·6	30·0	2 6

* On the basis of number of pieces exported and not on tonnage.

It will be seen that the share of raw hides in the total exports from India and Burma is on the decrease. The fall in value is more pronounced than the fall in quantity. Compared with the five year period immediately preceding the Great War of 1914 the exports during the quinquennium ending 1938-39 have fallen by over 50 per cent in quantity and by over 80 per cent in value. The price realized per piece has come down from Rs. 5-12-0 to Rs. 2-6-0 during the same period. The exports during the last two periods under review are also considerably less than those during the post-War period, *i.e.*, 1919-20 to 1928-29. One of the reasons for the fall in raw hide exports appears to be the trade policies adopted in recent years by some of the European countries, notably Germany. Germany was a potential buyer of Indian hides and as will be seen later (see also diagram facing page 29) the exports to that country have fallen by over 60 per cent during the last ten years. This has had a bad effect on the price of Indian hides. The increase in exports of tanned hides and of unwrought leather may also to some extent account for the fall in raw hide export.

(3) KIPS.

(*a*) *Trend.*—The kips are of the greatest importance and comprise over 80 per cent of the present exports of raw hides from this country. The five-yearly averages of the combined exports of kips from India and Burma during the 27 years ending 1938-39 are given in the following table.

Exports of kips from India and Burma.

(1912-13 to 1938-39).

Quinquennium ending.	Quantity.			Value.		
	Tons. (thousand).	Pieces†. (lakhs).	Percentage of total raw hides exported.‡	Total. (lakhs).	Per ton.	Per piece.
				Rs.	Rs.	Rs. A.
1913-14*	39·4	92·6	67·8	593·0	1,505	6 6
1918-19	23·5	55·2	71·4	370·8	1,578	6 11
1923-24	23·6	55·5	78·4	278·7	1,181	5 0
1928-29	25·7	60·4	78·6	282·8	1,100	4 11
1933-34	15·9	37·4	81·1	115·3	725	3 1
1938-39	19·6	46·1	82·5	109·3	558	2 6

* Average for two years 1912-13 and 1913-14 only.

† At the rate of 235 kips per ton or about 9½ lb. per piece.

‡ On the basis of total tonnage and not on number of pieces exported.

It will be seen that during the quinquennium ending 1918-19 kips represented about 70 per cent of the exports but their proportion has progressively increased and now they comprise over 82 per cent of the total raw hides exported from this country. The quantities have, no doubt, decreased and so also the values, but the position shows the steady demand for kips as compared with other Indian hides. The average price per ton during the quinquennium ending 1938-39 was only 35 per cent of that realized during the five year period ending 1918-19. It is seen that in late years the export value per kip has been only Rs. 2-6-0 and at this price, generally, fallen air-dried hides of somewhat inferior selection could be exported.

(*b*) *Periodicity of exports.*—The average monthly exports of kips from British India by sea during the five year period ending 1936-37 are given in the following table.

Average monthly exports of kips from India and Burma.

(Average of 1932-33 to 1936-37.)

Month.	Tons.	Percentage to annual total.
January	1,561	9·0
February	1,769	10·2
March	1,879	10·9
April	1,592	9·2
May	1,575	9·1
June	1,436	8·3
July	1,218	7·0
August	1,208	7·0
September	1,336	7·7
October	1,237	7·2
November	1,262	7·3
December	1,220	7·1
Total ..	17,293	(100·0)

It is seen that the monthly figures vary from 7 to 10·9 per cent, the normal monthly average being 8·3 per cent. During the first part of the year the quantities are slightly more than during the latter half and over 30 per cent of the exports occur in the 3 months, January to March. During the monsoon, the difficulty in drying the hides to some extent affects the quantities exported.

(*c*) *Destinations.*—The shares of principal countries importing kips from India and Burma during each quinquennium from 1912-13 to 1936-37 are given in the following table. The shares of the main ports of consignment are also given for the corresponding periods.

Shares of different countries importing kips from India and Burma.*

—	Average for two years 1912-13 and 1913-14.	Average for the quinquennium ending.				Average for trieunium ending 1936-37.
		1918-19.	1923-24.	1928-29.	1933-34.	
Total quantity exported. (Tons).	39 355	23,529	23,587	25,700	15,875	19,383
Importing countries—	Percentage to total.	Percentage to total.	Percentage to total.	Percentage to total.	Percentage to total.	Percentage to total.
Germany	45·9	6·0	29·8	46·8	33·8	29·7
Italy	13·3	35·4	19·3	19·8	22·6	14·5
United Kingdom ..	3·2	23·7	12·6	5·9	8·5	20·8
United States of America	6·7	21·0	14·8	1·2	0·7	0·4
Spain	6·3	4·5	8·4	7·9	7·6	2·1
Austria	16·2	1·7	0·2	..	..	..
Netherlands	1·5	0·1	1·0	2·3	5·0	5·0
Greece	0·1	0·1	0·2	1·4	4·2	4·6
Sweden	..	1·1	4·3	3·6	4·1	2·5
Norway	..	1·1	1·9	1·8	3·3	2·6
Other countries ..	6·8	5·3	7·5	9·3	10·2	17·8
	(100)	(100)	(100)	(100)	(100)	(100)
Share of exporting ports in —	Percentage to total.	Percentage to total.	Percentage to total.	Percentage to total.	Percentage to total.	Percentage to total.
Bengal	76·9	67·5	77·9	77·6	68·5	65·3
Bombay	1·8	4·2	0·7	1·9	4·0	4·2
Sind	10·1	17·6	11·0	10·4	9·1	9·2
Madras	..	..	0·1	..	..	0·6
Burma	11·2	10·7	10·3	10·1	18·4	20·7
	(100)	(100)	(100)	(100)	(100)	(100)

It is seen that the Central European countries are the principal buyers of kips from India and Burma. War conditions in these countries naturally give an erratic course to the Indian exports. The share of Germany has always been the highest, except during the War period. In late years, however, it has been declining. Italy has also been purchasing large quantities and because it was an ally during the War of 1914, extra large quantities were shipped to it during that period. The United Kingdom, before the War of 1914, had a negligible share in this country's exports but took extra large quantities of raw kips during the last War. It, however, again reduced its share in subsequent years but from 1934 onwards, it imported almost the same proportions as it did during the War period. The United States of America also took large quantities during the War of 1914 but during the last 12 or 15 years it has almost given up the purchase of Indian kips. Austria too was an important buyer before 1914, but, being an enemy country, its imports were then cut off and since then it has apparently made arrangements elsewhere and has never returned to Indian raw stock. After 1914 some of the smaller countries, however, commenced taking the Indian kips in larger quantities, which seems to indicate a tendency on their part to import direct from India. It may be mentioned here that formerly most of the hides were shipped to Hamburg, from which place they were redistributed to smaller countries.

---

*The figures given in the above table and in those which follow, do not necessarely mean that the shares shown against the various countries, were meant for utilisation within them, as some of the imports may have been obtained for re-exports.

The diagram facing page 29 shows that the quantities imported by the four principal and well established buyers of raw hides (kips and buff hides) have been fast declining in recent years. This indicates that raw hides from India and Burma are on the whole losing their previous markets, possibly owing to the fact that industrially advanced countries are concentrating more attention on the manufacture of substitutes for leather. But it is doubtful if these could be cheaper and better than Indian hides. It would appear, therefore, that there must be other reasons for the decline of Indian hide trade and the question needs to be fully explored if the lost trade is to be revived, either in the previous markets or in other countries.

A comparison of the quantity taken by each country and the respective value realised shows that the price per ton has not been uniform in every case. The table below explains the position.

Price at which the kips have been exported to different countries during the five years ending 1936-37.

Country.	Price.	
	Per ton.	Per piece.
	Rs.	Rs. A.
Netherlands	596	2 9
Germany	583	2 8
Spain	568	2 7
Italy and Greece	476	2 0
United Kingdom	397	1 11
Average price	524	2 4

The preceding table shows that while the average price was Rs. 524 per ton, Netherlands, Spain and Germany paid from Rs. 596 to Rs. 568 per ton or about 12 per cent above the average, whereas the other countries paid less. In this respect, the United Kingdom paid the lowest price. *viz.*, only Rs. 397 per ton, or approximately 23 per cent below the average. This indicates a certain amount of discrimination in regard to quality, some countries preferring better hides than others.

It will be seen from the table on page 32 that *Bengal* ports (mainly *Calcutta*) handle the bulk of the export trade. *Karachi* (the main port of *Sind*) stands second, *Bombay* handles small quantities and *Madras* practically nothing, so far as the raw kips are concerned. The share of Burma is on the increase because the quantity exported by it has remained more or less stationary, whereas the fall in Indian exports of kips has been rather heavy.

(4) BUFF HIDES.

(*a*) *Trend.*—The five yearly averages of the export of raw buff hides from India and Burma during the 27 years ending 1938-39 are given in the following table.

Export of buff hides from India and Burma.

(1912-13 to 1938-39).

Quinquennium ending.	Quantity.		Percentage to total raw hides exported‡.	Value.		
	Tons. (thousand).	Pieces†. (lakhs).		Total. (lakhs).	Per ton.	Per buff hide.
				Rs.	Rs.	Rs. A.
1913-14* ..	17·3	28·9	29·8	205·1	1,186	7 2
1918-19 ..	8·0	13·4	24·3	111·1	1,389	8 5
1923-24 ..	5·2	8·7	17·3	46·7	898	5 6
1928-29 ..	6·2	10·3	18·9	46·9	756	4 9
1933-34 ..	3·2	5·3	16·3	20·6	644	3 14
1938-39 ..	3·7	6·2	15·6	18·3	495	2 15

The decrease in the export of buff hides follows closely the downward trend exhibited by the total export trade in raw hides. But their proportion in the total exports of raw goods has also decreased steadily from about 30 to 15 per cent during the period under review showing that they are losing their position in the international markets. This is notwithstanding the fact that very few countries produce or export buffalo hides and India is one of the most important producers of this type of hide. The price realised per ton or per piece has fallen a great deal. The average for the five year period ending 1938-39 was only about 35 per cent of that realised during the quinquennium ending 1918-19. Here also it is clear that at Rs. 2-15-0 per piece, mostly the fallen and air-dried hides only could be available for export.

---

*Average for two years, 1912-13 and 1913-14 only.

†At the rate of 167 buff hides to a ton or about 13½ lb. per piece.

‡On bte basis of total tonnage and not on number of pieces exported.

(*b*) *Periodicity of exports.*—The average monthly export of buff hides from India during the five year period ending 1936-37 are given in the following table.

Average monthly exports of buff hides from India and Burma.

(1932-33 to 1936-37).

Month.	Quantity. (tons).	Percentage to annual total.
January	330	11·4
February	401	13·8
March	359	2·4
April	242	8·3
May	203	7·0
June	154	5·3
July	164	5·6
August	170	5·8
September	208	7·2
October	201	6·9
November	202	7·0
December	270	9·3
Total ..	2,904	(100)

It is observed that January, February and March are the peak months for the export of buff hides also. Compared with the kips the variations in this case are rather more pronounced and the heavy shipments during the first three months of the year may be due to the increased slaughterings of buffaloes for the biltong trade.

(*c*) *Destinations.*—The average shares of countries importing buff hides from India and Burma for five year periods comprised in the 27 years ending 1936-37, are given in the following table. The shares of the exporting ports are also given for the corresponding periods.

Share of different countries importing buff hides from India and Burma.

—	Average for two years 1912-13 and 1913-14.	Average for the quinquennium ending.				Average for triennium ending 1936-37.
		1918-19.	1923-24.	1928-29.	1933-34.	
Total quantity exported. (Tons).	17,272	7,996	5,243	6,154	3,200	3,337
Importing countries—	Percentage to total.	Percentage to total.	Percentage to total.	Percentage to total.	Percentage to total.	Percentage to total.
United States of America	37·4	64·0	31·1	14·6	5·4	10·1
Germany	7·7	1·0	14·9	26·5	24·3	16·6
United Kingdom ..	10·5	25·4	27·7	8·6	9·0	11·2
Greece	*Neg.*	1·1	2·1	4·9	14·7	13·7
Turkey	6·6	1·3	2·7	7·6	15·2	4·5
Italy	2·6	2·1	7·1	7·8	3·7	2·2
Netherlands	8·5	0·4	2·1	1·9	1·0	0·4
Spain	0·6	0·3	0·6	2·0	1·7	0·4
Other countries ..	26·1	4·4	11·7	26·1	25·0	40·9
	(100)	(100)	(100)	(100)	(100)	(100)
Share of exporting ports in—	Percentage to total.	Percentage to total.	Percentage to total.	Percentage to total.	Percentage to total.	Percentage to total.
Bengal	82·5	73·9	62·8	67·0	62·4	52·8
Bombay	0·7	1·5	1·5	2·1	3·2	1·5
Sind	2·9	8·2	11·3	10·0	11·7	14·1
Madras	1·1	0·2	0·6	0·2	*Neg.*	*Neg.*
Burma	12·8	16·2	23·8	20·7	22·7	31·6
	(100)	(100)	(100)	(100)	(100)	(100)

It is seen that up to the end of 1923-24 the United States of America were the principal buyers of Indian buff hides and in some years took as much as two-thirds of the total exports. These hides are used there for making a special type of mechanical leather. In recent years the quantity imported by that country has, however, been considerably reduced. Previous to 1914, the share of Germany was only about 8 per cent of the total raw buff hide exports, but afterwards that country took almost a quarter of the quantity sent abroad. In more recent years, however, the share again decreased to about 16 per cent. The United Kingdom has been taking small quantities but these have varied considerably from year to year. Greece which took negligible quantities before 1914, has been importing for the last 10 years nearly 15 per cent of India's exports. Turkey, Italy and Spain have also been taking small quantities, but not regularly. It would be noticed that in the case of the triennium ending 1936-37, the share under " other countries " is shown as 40·9 per cent, which includes large shipments to Sweden, Bulgaria, Syria and Egypt. For the last 10 years or so, these countries have been buying fairly large quantities of Indian buff hides.

As is the case with the export of kips, the ports of *Bengal* (mainly *Calcutta*) are the most important in the handling of the export trade in buff hides. In recent years, however, *Karachi* has been exporting larger quantities than it used to do. *Bombay* and *Madras* are unimportant and very few buff hides go out through these ports.

It would be noticed from the table that 20 years ago the share of Burma used to be 12 to 15 per cent, in the combined trade of the two countries, but during the three years ending 1936-37, it rose to about 32 per cent. This does not mean that the Burmese trade has doubled itself during these years. The fact is that when Burma was exporting about 13 per cent, the total trade amounted to over 17,000 tons per annum and its share used to be about 1,800 tons. During the three year period ending 1936-37, it exported 32 per cent, but this was out of the total exports of 3,337 tons only. Thus actually its share was only about 1,000 tons in the combined trade of the two countries, *i.e.*, India and Burma during the latter period.

In the case of buff hides also it is observed that different countries pay varying prices and in this case the difference is much greater than in the case of kips. The table below gives the figures for 5 years ending 1936-37.

Price paid per ton for buff hides by different countries.

(Average for 5 years ending 1936-37).

Country.	Price.*	
	Per ton.	Per piece.
	Rs.	Rs. A.
United States of America	608	3 10
Germany	548	3 5
Greece	526	3 2
Italy	423	2 8
Turkey	286	1 11
United Kingdom	193	1 2
Average	431	2 9

It is observed that there is a vast disparity between the price paid by the United States of America and the United Kingdom. The former country obviously needs buff hides of superior quality and pays for them accordingly. Turkey also has paid a price much below the average. The question of price and quality is fully discussed in chapters that follow.

(5) CALF SKINS.

The five yearly averages of the export of cow and buffalo calf skins from India and Burma during the 27 year period ending 1938-39 are given in the following table.

Export of calf skins from India and Burma.

(1912-13 to 1938-39).

Quinquennium ending.	Quantity.			Value.		
	Tons. (thousand).	Pieces*. (lakhs).	Percentage‡ to total raw hides exported.	Total. (lakhs).	Per ton.	Per piece.
				Rs.	Rs.	Rs. A.
1913-14† ..	1·4	8·6	2·4	18·6	1,329	2 3
1918-19 ..	1·4	8·6	4·3	22·6	1,614	2 10
1923-24 ..	1·3	8·0	4·3	16·4	1,262	2 1
1928-29 ..	0·8	4·9	2·5	9·8	1,225	2 0
1933-34 ..	0·5	3·1	2·6	4·7	940	1 9
1938-39 ..	0·4	2·4	1·7	3·0	750	1 4

*At 612 pieces to a ton.
†Average for two years, 1912-13 and 1913-14 only.
‡On the basis of tonnage.

It is seen from the previous tables that the exports of calf skins are unimportant compared with the exports of kips and even buff hides. During the five years ending 1938-39, they amounted to only 400 tons valued at Rs. 3 lakhs. These also have been declining from year to year and in the quinquennium ending 1938-39 they were only a little over a quarter of the quantities sent out prior to 1918-19. The value per piece has also come down by over 50 per cent during the interval.

The shares of important countries which import calf skins are given in the following table.

Shares of countries importing calf skins.

(Average of 1933-34 to 1937-38).

Average export.	(Tons). 444
	Percentage to total.
Importing countries—	
Italy	**22·5**
Germany	**19·2**
Spain	**15·3**
United States of America	**14·4**
United Kingdom	**4·3**
Other countries	**24·3**
	(100)
	Percentage to total.
Share of exporting ports in—	
Sind	**87·6**
Bengal	**10·1**
Bombay	**1·6**
Madras	**0·7**
	(100)

It is seen that Italy, Germany, Spain and the United States of America have been the important buyers taking between them over 60 per cent of the Indian calf skins exported.

In point of export from India, the port of *Sind* (*viz.*, *Karachi*) handled the majority of calf skins followed by *Bengal*, *Bombay* and *Madras* ports. Burma hardly exports any calf skins.

(6) EXPORT OF TANNED OR DRESSED HIDES.

The export trade in tanned or dressed hides is not so old as that in raw hides. These hides are vegetable tanned and are imported by the curriers and dressers in different countries for finishing into leather.

During the 5 years ending 1938-39, the export trade in tanned and dressed hides from India and Burma comprised of 83 per cent kips, 8 per cent buff hides and 9 per cent calf skins. They are, however, dealt with jointly in this section.

(*a*) *Trend.*—The quinquennial averages of the quantity and value of tanned hides exported during the 30 year period ending 1938-39 are given in the table below :—

Export of tanned or dressed hides from India and Burma.

(1909-10 to 1938-39).

Quinquennium ending.	Pieces*. (lakhs).	Percentage† to total exports of hides and leather.	Total value. (lakhs).	Percentage to total value of exports of hides and leather.	Value per piece.
			Rs.		Rs. A.
1913-14	29·1	20·3	159·4	19·5	5 8
1918-19	54·1	41·3	439·6	46·4	8 2
1923-24	36·8	33·9	319·4	47·6	8 11
1928-29	43·8	36·3	353·8	50·3	8 1
1933-34	37·4	44·3	244·0	61·9	6 9
1938-39	48·0	43·2	258·0	59·3	5 6

It is observed that the share of tanned hides in the total exports of the country has been progressively increasing since 1914. The rise in value has been more pronounced than in the quantities. During the 5 year period ending 1938-39, the exports have been 47·9 lakh pieces or a little over 43 per cent of the total exports from India and Burma. The value was Rs. 258 lakhs or about 59 per cent of the total value of the exports.

---

*Calculated at 320 pieces to a ton or 7 lb. per piece.

†Calculated on the basis of pieces and not on the tonnage exported.

The quantities exported in recent years have been three times that exported before 1914. The main reason for this is that the Indian tanned hides can be finished into leather with comparative ease and cheapness. Besides, in tanning the weight per piece is reduced* and the importers are able to make a saving in the freight, etc. As explained earlier, these goods need only to be finished. Vegetable tanning of the hides is done cheaply on a cottage industry scale in this country. The importing countries, therefore, to some extent, derive direct benefit from the cheap labour and tanning materials available in India.

(*b*) *Periodicity of exports.*—The monthly averages for the export of dressed hides during the five year period ending 1936-37 are given in the table below :—

Average monthly exports of tanned or dressed hides from India.

(1932-33 to 1936-37).

Month.	Tons.	Percentage to annual total.
January	1,129	8·6
February	1,105	8·4
March	1,230	9·4
April	1,043	8·0
May	1,039	8·0
June	1,190	9·1
July	950	7·3
August	1,168	8·9
September	1,092	8·3
October	960	7·3
November	1,205	9·2
December	987	7·5
Total ..	13,098	(100)

It is observed that exports of dressed hides do not follow any definite periodicity. However, the months of March, June and November show slight peaks. The exports are lowest during the months of July and October.

---

*The average weight of raw hides (kips and buff hides) exported is about 10 lb. per piece against only 7 lb. per piece which is the weight of tanned hides.

(*c*) *Destinations.*—The shares of the principal importing countries for the dressed hides from India and Burma for five yearly periods during the 27 years ending 1936-37 are given in the table below. The shares of ports handling this trade are also given for the corresponding periods.

Shares of countries importing Indian tanned or dressed hides.

(Kips and buff hides).

——	Average for two years 1912-13 and 1913-14.	Average for the quinquennium ending.				Average for the triennium ending 1936-37.
		1918-19.	1923-24.	1928-29.	1933-34.	
Total quantity exported * (Tons).	10,159	16,811	10,934	12,646	10,741	13,196
	Percentage to total.	Percentage to total.	Percentage to total.	Percentage to total.	Percentage to total.	Percent age to total.
Importing countries—						
United Kingdom.	97·9	99·4	90·9	92·2	95·5	97·0
United States of America.	0·3	0·2	2·8	3·4	1·7	1·7
Hongkong ..	..	..	3·1	2·0	0·6	..
China ..	0·1	..	0·5	1·0	1·2	0·2
Other countries	1·7	0·4	2·7	1·4	1·0	1·1
	(100)	(100)	(100)	(100)	(100)	(100)
	Percentage to total.	Percentage to total.	Percentage to total.	Percentage to total.	Percentage to total.	Percentage to total.
Exporting ports in—						
Madras ..	82·3	84·4	78·5	86·6	92·9	96·5
Bombay ..	17·3	15·3	15·0	9·2	4·8	2·6
Bengal ..	..	..	1·6	1·0	0·3	0·5
Sind ..	0·1	0·2	0·3	0·2	0·2	0·2
Burma ..	0·3	0·1	4·6	3·0	1·8	0·2
	(100)	(100)	(100)	(100)	(100)	(100)

---

*Besides these some quantities of tanned calf skins are also exported. For instance approximately 1,235 tons of tanned calf skins were exported during the triennium ending 1936-37 of which the United Kingdom imported over 95 per cent.

It is observed that the United Kingdom is the principal, if not exclusive, buyer of tanned or dressed kips and buff hides from India and Burma. These are commonly known as half tanned. During the **Great War,** she purchased over 99 per cent of the total exports. The average of her share for the triennium ending 1936-37 was 97·0 per cent. The remainder of the exports is taken by the United States, China, Hongkong, etc., in small quantities.

Amongst the exporting provinces, *Madras* stands first, because the vegetable tanning industry is concentrated in that province and other areas near it, *e.g.*, *Mysore* and *Hyderabad States*. Her share has been gradually increasing from 82·3 per cent in 1912-13 and 1913-14 to 96·5 per cent during the triennium ending 1936-37 except for a small decline during the period ending 1923-24. The *Bombay Province* also has a small export trade but the share of *Bombay* port in the handling of these goods has been declining in recent years. During the three years ending 1936-37 the share of *Bombay* port was only 2·6 per cent. Other provinces and Burma are unimportant as exporters of dressed hides.

(7) EXPORT OF UNWROUGHT LEATHER.

The exports of unwrought leather have assumed some importance only recently. This is due to the development of the chrome tanning industry in this country during the last 20 to 25 years and the preference which India received from the United Kingdom after the Ottawa Agreement in 1932 for the import of tanned goods into that country. The exports of unwrought leather from Burma are practically *nil.* Five yearly averages of the exports from India during the 30 year period ending 1938-39 are given in the table below :—

Exports of unwrought leather from India.
(1909-10 to 1938-39).

Quinquennium ending.	Quantity.		Value.		
	Pieces. (lakhs).	Percentage* to total exports of hides and leather.	Total. (lakhs).	Percentage to total value of hides and leather exported.	Per piece.
			Rs.		Rs. A.
1913-14 ..	0·3	0·2	1·2	0·1	4 0
1918-19 ..	1·3	1·0	3·8	0·4	2 15
1923-24 ..	2·5	2·3	9·8	1·5	3 15
1928-29 ..	1·7	1·4	10·2	1·4	6 0
1933-34 ..	1·9	2·3	9·2	2·3	4 14
1938-39 ..	8·4	7·6	46·4	10·7	5 8

***Calculated on the basis of number of pieces and not on the total tonnage.**

(a) *Trend.*—In general the exports of unwrought leather from India have been on the increase. During the quinquennium ending 1913-14 they amounted to about 30,000 pieces only valued at Rs. 1·2 lakhs. For the five yearly period ending 1938-39 the quantity increased to 8·4 lakh pieces and the value to Rs. 46·4 lakhs. The value per piece also rose from Rs. 4 to Rs. 5-8-0 in the same period, although the maximum of Rs. 6 per piece was reached during the five years ending 1928-29.

(b) *Periodicity of exports.*—The average monthly exports of unwrought leather from India during the five years ending 1936-37 are given in the following table.

Average monthly exports of unwrought leather from India.

(1932-33 to 1936-37).

Month.	Tons.	Percentage to annual total.
January	66·4	9·4
February	59·3	8·4
March	63·1	9·0
April	48·1	6·8
May	50·7	7·2
June	63·8	9·1
July	56·1	8·0
August	60·7	8·6
September	65·2	9·3
October	53·0	7·5
November	65·6	9·3
December	52·0	7·4
Total ..	704·0	(100)

The exports of unwrought leather do not show any regularity in regard to the months of export. It is, however, observed that exports are high during January, March, June, September and November and are low during April, May, October and December.

(c) *Destinations.*—The average proportion of exports of unwrought leather sent from India to different countries during the five years ending 1937-38 are shown in the following table.

Shares of the countries (other than Burma) to which unwrought leather is exported from India.

(Average for 5 years ending 1937-38).

—	Quantity.	Value.
Quantity exported. (Tons)	976	..
Value in lakh rupees	..	39·9
	Percentage to total.	Percentage to total.
United Kingdom	71·4	82·8
Iraq	17·8	8·8
Kenya Colony	2·3	1·2
Other countries	8·5	7·2
Total ..	(100)	(100)

It is observed that the United Kingdom purchases over 71 per cent of the exports of unwrought leather from India. Her share in value is 82·8 per cent indicating thereby that she purchases better quality leather. Iraq which takes 17·8 per cent in quantity pays only 8·8 per cent of the value showing that her imports are inferior in quality.

Re-exports of unwrought leather from India and Burma are practically negligible. Similarly, countries connected by land do not take any of these goods from this country.

(8) DEVELOPMENT OF THE EXPORT TRADE IN HIDES.

It will be seen from the table on page 28 that, although the export of tanned hides shows an upward trend, India's foreign trade in raw and tanned goods, taken together, has gradually declined, both in quantity and value, during the last 25 years or

50. Prior to the Great War (1914), India sent abroad approximately 143 lakh raw and tanned hides valued at over Rs. 8 crores. The figure gradually diminished and the lowest limit was reached in the quinquennium ending 1933-34, when foreign countries took only 84 lakh pieces and paid for them less than Rs. 4 crores. The position in the following quinquennium improved a little as far as the quantity was concerned, but in point of value the lowest price per piece was realised during this period in the course of the last 25 years.

The fall in exports is partly attributed to the general depression in the leather trade in England and America since 1929 and partly to the expansion of the chrome leather industry in India after the Ottawa Trade Agreement of 1932. As a result of the expansion, the best hides are now being used within the country with the result that the export prices which previously included the superior stuff also, fell. The importing countries could not probably pay as much as the Indian tanner would and had to make arrangements elsewhere. In order that the trade may be brought upto its previous level, it is necessary to raise the standard of flaying and preparing hides in this country so that a larger proportion of them may fall in the superior selections. It is also necessary that the export consignments should be made properly after garding the hides.

More than 20 years ago, the Trade Enquiry Committee on Indian Hides, appointed by the Imperial Institute, London, visited this country and pointed out in clear terms that a great deal of improvement in the flaying, curing and making up of the consignment before export was necessary. Unfortunately, however, little has been done to improve matters in the above directions. Some attempts have been made at improving the flaying and curing of hides, which are described in the chapter on Preparation for Market. It is obvious, however, that no tangible results could be expected from the few master flayers who were required to visit a large number of places in the province during the course of a year, and devote only 3 or 4 days at a centre, without the possibility of re-visiting the place again in the immediate future. At the 7 or 8 grading stations established under the AGMARK scheme, only the slaughtered hides in green condition were handled and these were not intended to cater for export demand. Finally in the matter of seeing that hide consignments are properly prepared before export, practically nothing has been done so far to improve matters.

The lack of precise knowledge on the part of some of the exporters about the requirements of foreign buyers, is the other important factor which is responsible for the unsatisfactory state of affairs in the export trade. This has been emphasized in the latest Report of the Indian Government Trade Commissioner in New York, with regard to almost all the commodities exported from India. In the past, a few of the Indian hide and skin shippers have, no doubt, visited the importing countries and gained first-hand information of the requirements and trade practices abroad. Such visits can, however, be undertaken only by a few enterprising persons who can afford them and even that once in a while. In any case, the export trade as a whole needs a good deal of information in this respect. This is particularly unfortunate because about half of the Indian hide production is exported as raw or tanned and the prices realised by them directly affect the prices in the internal markets. In the case of another closely related commodity, *viz.*, skins, conditions are even worse. Although, over 95 per cent of the Indian production of skins is exported, little has been done, so far, to improve the quality of consignments for export or to study the requirements of the buyers abroad. Here also there is ample evidence to show that the industry has received repeated setbacks due to malpractices creeping in in the export trade, there being no check on the consignments sent out of India.

During the last few years, the Government of India have, however, appointed in some of the leading countries officers, known as the Indian Trade Commissioners, whose main function is to look after the interests of the Indian trade in general. When approached by members of trade abroad, they also help in establishing contact with appropriate parties in India. It is felt, however, that the utility of the Indian Trade Commissioners could be considerably enhanced, and the trade in India helped to derive much wider benefits, if suitable " technical officers " with experience in the production, preparation, grading and marketing of agricultural commodities, which are exported from India, were " attached " to them. Such attached officers could make a closer study of the requirements of the buyers or manufacturers and explore ways and means for obtaining better prices for Indian consignments. It should also be the duty of these attached officers to study the preparation of similar consignments by other exporting countries. For the guidance of the exporters and government departments, these officers should compile suitable instructions for the preparation of consignments for export in the manner required by foreign buyers.

H.—Note on Indo-Burma trade.

Prior to 1st April 1937, Burma was one of the provinces of India, and as is the case with the other provinces, there has been the usual inter-provincial trade in raw hides, leather, etc.. between it and rest of India. Burma now is a separate country and is not under the Government of India. Figures of import and export are not available readily prior to 1920-21 and for the subsequent period also they are available separately for raw hides, tanned hides and unwrought leather only for some years. Such figures as are available are reproduced in the following table.

Imports of raw and tanned or dressed hides and of unwrought leather into India from Burma.

——	Raw hides pieces. (*a*)	Tanned or dressed hides pieces. (*b*)	Unwrought leather pieces. (*c*)	Total pieces.	Total value. (lakhs).
					Rs.
1920-21	25,500	880	..	26,380	1·06
1921-22	83,700	220	410	92,115	2·71
1922-23	59,850	220	1,229	84,655	1·93
1923-24	69,000	220	410	77,415	2·79
1924-25	140,850	220	3,501	211,100	7·03
1925-26	118,800	..	1,266	144,130	6·62
1926-27	139,500	220	112	141,955	6·07
1927-28 ..	107,550	220	..	107,770	5·09
1928-29	126,900	*Neg.*	37	127,645	6·09
1929-30	213,150	880	8,344	380,910	9·70
1930-31 . ..	132,450	2,860	..	135,310	4·92
1931-32 ..	99,300	1,540	447	109,780	2·89
1932-33	122,550	440	*	122,990	2·35
1933-34	123,450	1,100	*	124,550	2·44
1934-35	79,200	2,420	*	81,620	1·61
1935-36	103,800	440	*	104,240	1·84
1936-37	112,050	440	*	112,490	2·19
1937-38	58,350	..	..	58,350	1·57
Average 18 years ..	106,442	684	1,313	124,634	3·83

It is seen that the number of pieces imported into India from Burma each year has varied considerably and so also have the values of these pieces. As has been indicated before, Burma has export trade with countries other than India also but as India is the nearest country, whatever remains unlifted by them is perhaps shipped to this country. Of all the lines, the export of raw hides from that country has occupied the most important place, as the tanning industry there is comparatively undeveloped. In late years, that is, from 1934-35, the value of imports from Burma into India has been approximately Rs. 1·8 lakhs per annum. The average of 18 years ending 1937-38 has been Rs. 3·8 lakhs per annum.

(*a*) 150 pieces to a ton, (*b*) 220 pieces to a ton, and (*c*) 745 pieces to a ton.

*From 1932-33 onwards, the figures for unwrought leather are included in dressed hides.

On the side of exports from India to Burma, the figures show that their value during the 18 years ending 1937-38 has been Rs. 4·4 lakhs per annum or about Rs. 60,000 more than the value of imports into India, from that country. The table below gives the annual figures:—

Exports of raw and dressed hides and of unwrought leather from India to Burma.

——	Raw hides pieces. (*a*)	Dressed hides pieces. (*b*)	Unwrought leather pieces. (*c*)	Total pieces.	Total value. (lakhs).
					Rs.
1920-21	14,720	3,708	10,691	29,119	1·12
1921-22	346,840	34,299	36,617	417,756	12·59
1922-23	48,530	40,788	8,828	98,146	4·35
1923-24	1,840	55,620	16,204	73,664	3·21
1924 25	1,380	69,525	1,043	71,948	3·59
1925-26	8,510	90,846	261	99,617	4·21
1926-27	5,750	53,766	..	59,516	2·49
1927-28	16,790	75,087	596	92,473	3·91
1928-29	11,040	69,525	..	80,565	3·65
1929-30	1,150	69,525	16,949	87,624	3·58
1930-31	460	43,569	11,287	55,316	1·75
1931-32	..	52,839	31,402	84,241	2·85
1932-33	230	201,159	*	201,389	4·88
1933-34	..	203,013	*	203,013	5·21
1934-35	230	233,604	*	233,834	5·86
1935-36	..	229,896	*	229,896	6·40
1936-37	..	279,027	*	279,027	6·68
1937-38	..	106,605	..	106,605	3·10
Average 18 years	25,415	106,244	7,438	139,097	4·41

It is seen that the most important line of Indian exports has been that of dressed hides and unwrought leather, for the same reason as before, *viz.*, that the tanning industry in Burma is comparatively underveloped. These comprise mostly of tanned calf skins.

(*a*) 230 pieces to a ton, (*b*) 927 pieces to a ton and (*c*) 745 pieces to a ton.

*From 1932-33 onwards, the figures for unwrought leather have been included in dressed hides.

I.—Net available supplies in India.

The position in late years regarding the production, imports and exports of hides in India is summarised below. The imports and exports of tanned or dressed hides and of unwrought leather, together with the values, have also been taken into account.

I.—*Production of raw hides*—

	Kips (*a*). (lakhs).	Buff hides (*a*). (lakhs).	Total pieces. (lakhs).
(*i*) Fallen	147·4	43·8	191·2
(*ii*) Slaughtered	52·7	13·3	66·0
Total	200·1	57·1	257·2

II.—*Imports* (*b*)—

	Tons.	Pieces. (lakhs).
(*i*) Raw hides	4,804	10·1
(*ii*) Unwrought leather	1,537	11·5
(*iii*) Dressed or tanned hides	*Neg.*	*Neg.*
Total	6,341	21·6

21·6

Production *plus* imports .. .. 278·8

III.—*Exports* (*b*)—

	Tons.	Pieces. (lakhs).
(*i*) Raw hides	18,800	47·2 (c)
(*ii*) Indian tanned or dressed hides	14,970	47·84
(*iii*) Indian tanned unwrought leather	1,130	8·4
Total	34,900	103·44

103·44

Net available in India .. .. .. 175·36

IV.—*Total annual value of*—

(*i*) Raw hide production Rs. 6 crores.

(*ii*) Raw hide imports Rs. 24·56 lakhs.

(*iii*) Raw hide exports Rs. 4·25 crores.

(*a*) Inclusive of calf skins.

(*b*) Figures relate to average for 5 years ending 1938-39.

(*c*) At the rate of 251 pieces to a ton.

The foregoing position shows that the total imports, in terms of pieces, are about 8½ per cent of the annual Indian production. The export trade, on the other hand, is of considerable importance, for about 40 per cent of the production is marketed in places outside India. This position remains after even losing a considerable portion of the previous trade.

The export trade ranks high in hides the foreign trade of this country, the value of exports being Rs. 4·25 crores per annum against Rs. 24·56 lakhs worth of imports.

J.—Net available supplies in Burma.

Production, imports and exports of raw hides in Burma, in late years, are summarised below. Trade in dressed hides and in unwrought leather has also been accounted for, together with the values.

I.—*Production of raw hides*—

	Kips (*a*). (lakhs).	Buff hides(*a*). (lakhs).	Total pieces (lakhs).
(*i*) Slaughtered	5·2	*Neg.*	5·2
(*ii*) Fallen	2·7	0·6	3·3
Total ..	7·9	0·6	8·5

II.—*Imports*—

	Tons.	Pieces. (lakhs).	
(*i*) Raw hides (*b*)	233·0	0·35	
(*ii*) Tanned or dressed hides (*c*)	61·5	0·57	
(*iii*) Unwrought leather (*c*) ..	109·0	0·81	
Total ..	403·5	1·73	
			1·73
oduction *plus* imports			10·23

III.—*Exports* (*d*)—

	Tons.	Pieces (lakhs).
(*i*) Raw hides ..	5,590	8·40 (*e*).
(*ii*) Dressedhider ..	30	·06 (*f*)
(*iii*) Unwrought-leather	*Neg.*	*Neg.*
Total	5,020	8·46

Net available in Burma 1·77

(*a*) Inclusive of calf skins.

(*b*) Figures relate to annual average for 3 years ending 1936-37.

(*c*) Average for 1937-38 and 1938-39.

(*d*) Figures relate to annual average for 5 years ending 1938-39.

(*e*) At the rate of 150 raw hides to a ton.

(*f*) At the rate of 220 pieces per ton.

IV.—*Total annual value of—*

(*i*) Raw hide production Rs. 17 lakhs.

(*ii*) Raw hide imports Rs. 6·9 lakhs.

(*iii*) Raw hide exports Rs. 17·5 lakhs.

The production of hides in Burma is 8·5 lakh pieces per annum and almost the whole of it is exported in a raw condition. For internal use it imports about 80,000 pieces of unwrought leather, mostly from India. The export trade of Burma is of considerable importance and its value is Rs. 17·5 lakhs per annum. The value of imports is Rs. 6·9 lakhs.

K.—Note on the regulations on import of hides in certain countries.

From such information as it has been possible to collect, it appears that in most of the countries there is no import duty on raw hides. This procedure does not follow the principle adopted in the case of imports of other raw products. The non-imposition of an import duty on hides is mainly due to the facts that hides comprise the raw material for several industries in the importing countries and that they are considered as by-products of the meat industry and, consequently, their production is dependent on a multiple number of factors. For instance, no exporting country can economically increase its cattle slaughter, just for the sake of exporting the hides and dumping them in other countries.

As raw hides can easily carry certain contagious diseases, *e.g.*, anthrax, rinderpest, pleuro-pneumonia, etc., from which the animal might have suffered before or at the time of death, several countries have imposed stringent "disease control" regulations in respect of imported hides, with the object of minimising the chances of importing infection.

European countries.—In Great Britain, France, Germany, Italy, Spain, Portugal, Switzerland, Belgium, Denmark, Austria, Czechoslovakia, Greece, Norway and Sweden, there are generally no permanent restrictions, except in the case of shipments from areas where infection of some kind may be raging. The importation of raw hides (salted or dry) into the Netherlands, however, requires special permission.

United States of America.—Slaughtered hides from Great Britain, France, Italy, Spain, Norway, Sweden, the Netherlands, Hungary, Argentina, Uruguay, Brazil, Australia and New Zealand can be admitted into the United States, only if they are certified to be free from anthrax, rinderpest and foot and mouth disease, by a recognised veterinary official of the country concerned. Dry and wet-salted hides from other countries are admitted only when accompanied by a certificate from an American Consular Officer, testifying to the immunity of the stock from these diseases. In the case of dry hides, only a certificate of non-prevalence of anthrax in the country of origin is required. As regards foot and mouth disease and rinderpest, the process of cure is considered to amount to disinfection.

In case any of the above certificates is not procurable, the hides have to be accompanied by a certificate from an American Consular Officer, saying that the consignment had been suitably disinfected, under the supervision of his office and in accordance with a method approved by the United States Government. One of the prescribed methods is to soak the hides in one to one thousand solution of bichloride of mercury for at least 24 hours. Another is to immerse the hides for 30 minutes in 5 per cent solution of carbolic acid, provided the lot has been certified free from anthrax infection.

If, for any reason, the foregoing certificates can not be presented at the time of entry of the consignment at a United States port, the authorities may, at their discretion, permit the shipment to be cleared under what is known as "Tanners Agreement.". Under this procedure, the importers have to transport the goods direct to the tannery under specified precautions and deal with them in accordance with government regulations. In case the "Tanners Agreement" is not offered or accepted, the shipment is held in a quarantine store, till satisfactory arrangements for delivery or re-export have been made.

Australia.—The following certificates and declarations should accompany all consignments of hides for import into an Australian port :—

(*i*) A declaration, made before a magistrate in the country of origin, saying that the stock does not belong to animals which had suffered or died from anthrax or a similar disease.

(*ii*) A declaration that the hides are cured effectively, as dry-salted, wet-salted or arsenicated.

(*iii*) A certificate from a suitable government officer of the country of origin that he is satisfied that the declarations are correct and that after a biological examination of any doubtful pieces of the shipment concerned, he is satisfied that they are free from disease.

The actual forms of certificates sent by shippers from India in respect of slaughtered hides, are given below :

Declaration made by the shipper and attested by a Magistrate.

We hereby certify that the consignment————bales dry-salted cow hides, as under, shipped per s.s.————from————to————.

(*a*) does not contain to the best of our knowledge and belief any hides taken from an animal which died from any other means than slaughter, and

(*b*) that the hides were derived from animals killed for human consumption by slaughter and submitted to proper veterinary inspection and were not derived from any animal which had suffered from or died from anthrax, foot and mouth disease, rinderpest or other epizootic diseases.

Marks referred to above.

Per pro.....................Co., Ltd.

Signed before me this————day of————.

Magistrate.

Certificate issued by a government veterinary officer.

I hereby certify that samples of hides as hereunder quoted and shipped to————per s.s.————by Messrs.———— ————from British India, have undergone biological and bacteriological tests in my laboratory and have been found to be free from any material of a contagious or infectious nature.

Invoice No.————

Per s.s.————to————

Signature of Officer.

Date————

The steamers carrying hides can deliver them at the Australian ports only on receipt of permits from Port Quarantine Officers. Upon landing, all the stock is to be carried to a tannery or other approved place for such disinfection or treatment as the Chief Quarantine Officer might prescribe. The importer has to execute a bond of £100 in respect of each delivery, as a security against due fulfilment of the instructions.

Union of South Africa.—Up to early 1939, the certificates accompanying hides to Australia were also considered satisfactory by the Government of the Union of South Africa. Thereafter, however, that government made their import regulations more stringent. The amended regulations provide that no person can bring into the Union any hide or skin unless it is accompanied by a certificate signed by a veterinarian, authorised thereto by the government of the country of origin, that (*a*) in the case of any abattoir hide or skin the pelt was taken from an animal slaughtered at an abattoir under government inspection and was free from anthrax, foot and mouth disease, rinderpest and contagious bovine, pleuro-pneumonia, at the time of slaughter, (*b*) in the case of any other hide or skin, the pelt was derived from a district in which anthrax was not prevalent and in which foot and mouth disease, rinderpest and contagious bovine pleuro-pneumonia did not exist for a period of twelve months, immediately prior to the removal of the hide or skin to the Union.

Under the existing conditions, the Indian shippers found it rather difficult to obtain such certificates from the veterinary authorities at the ports or internal markets and at their request, the Commerce Department of the Government of India approached the South African Government to accept the certificates as described under Australia. The latter government indicated their inability to comply with the request, as in their experience severe loss to the local cattle had resulted due to importation of disease from outside, through hides. They added that the import regulations applied to all the countries and not to India only. In consequence of this, the raw hide trade between the two countries, which had become rather promising of late years, had to be practically abandoned.

The regulations described above and the stand taken by the South African Government show that all advanced countries of the world are taking effective steps against importation of disease virus, through pelts of animals. Early steps should therefore be taken to improve matters in India, so that the trade in hides, skins and other animal products does not suffer. There is no reason why India should lag behind so far as the efficiency of her veterinary health service is concerned.

A draft bill called " Animal Contagious Diseases Act " has already been prepared by the Imperial Council of Agricultural Research. The legislation has, however, to be of a provincial nature, and the various governments should give their early attention to the matter.

INTER-CHAPTER ONE.

India produces approximately 200 lakh kips and 57 lakh buff hides, or a total of 257 lakh hides every year. Of these only about a fourth are slaughtered hides, the remainder being dead or fallen. The production of horse and camel hides is insignificant. The annual value of Indian production is reckoned at Rs. 6 crores.

Compared with other countries, in India cattle are neither bred for slaughter nor are they killed in large numbers for the supply of beef. For instance, in France the number of cattle slaughtered annually represents as many as 48·7 per cent of the cattle of the country. In United Kingdom too, the proportion is over 33 per cent. In India, even including the fallen hides, the annual production represents only 11·5 per cent of the total number of the country's cattle. This explains why India, which possesses a third of world's cattle and buffaloes, produces only about 19 per cent of the hides in all the countries of the world for which statistics are available.

In a particular area, the mortality of cattle and the intensity of their slaughter govern considerably the production of hides, but the basic factor is its cattle population. For instance, the largest number of kips are produced in *Bengal*, because that province has the largest number of cows and oxen. On the other hand, although the *Punjab* and the *United Provinces* have more of buffaloes than *Madras Province*, the latter produces annually more of buff hides, as the animals there have comparatively short lives. The *Hindu Indian States* are unimportant for the production of slaughtered hides, as the slaughter of cattle is generally prohibited in them.

Very little data are available regarding the production of fallen hides during the different seasons. Enquiries, however, show that during the first three months of the year, their production is lowest, but it gradually rises with the advent of summer and at its end, *viz.*, in July/August, it is at its peak. Wet conditions in the first part of the monsoon apparently help to put an end to the life of many a starved cattle.

Seasonal variations in the production of slaughtered hides can be judged fairly accurately from the figures maintained at the principal slaughterhouses. These show that during the warmer months of April and May, slaughterings are lowest. The maximum demand for beef is during October to December and this increases the production of slaughtered hides during these months.

Widely varying information is available on the trend of production. The different estimates vary from 120 lakh to 305 lakh pieces per annum, whereas according to one source, if the average life of all animals (1,830 lakh cattle and buffaloes) was reckoned to be 4 years, the production would be 458 lakh hides. On the whole, it may be said that the production of hides has increased with the increase in cattle population, which has been about 13 per cent in the 15 years period between 1920 and 1935.

The import trade in raw hides is unimportant and is mainly confined to the bordering countries of Afghanistan, Nepal, Bhutan and Sikkim. In 1938-39, about 10 lakh pieces were imported of which only 13 per cent were received from across the seas. Besides, 18 lakh pieces of unwrought leather (chrome tanned kips) were also obtained, mainly from the United Kingdom and the United States of America. The value of raw hides and unwrought leather imported in 1938-39 together amounted to Rs. 24 lakhs.

The enormous production and partially developed character of the tanning industry in India result in the export of raw hides in large quantities. The trade is quite old and the first attempt to export hides from this country was made by the Dutch as early as 1644, or about 300 years ago. At present, India is the largest supplier of light cattle hides—kips—to the world markets. It is also the main source of buff hides as in no other country are buffaloes found in such large numbers.

In recent years, exports have declined considerably but even during the quinquennium ending 1938-39 India sent abroad 55 lakh pieces of raw hides. Besides, she exported 48 lakh pieces after tanning and 8·4 lakh pieces as finished leather. Thus during that quinquennium, India on an average sold abroad over 111 lakh pieces, or over 42 per cent. of the country's annual production. The average value of the exports amounted to Rs. 4·35 crores.

Germany used to be the largest buyer of Indian raw hides but for some years before the present war, its purchases have been on the decline. *Calcutta* and *Karachi* are the principal sea ports sending out the raw stock. As for tanned hides, the United Kingdom is the principal buyer. The goods are mostly prepared in South India and exported from *Madras.*

Burma.—Burma produces annually about 8½ lakh hides of which 93 per cent are kips and only 7 per cent buff hides. Unlike India the proportion of slaughtered hides in Burma is much greater and is about 61 per cent of the production. Only about 39 per cent of the hides are from dead animals. Almost the whole of Burma's production is exported in raw condition, mainly to India. For its home use, it imports, again mostly from India, about 35,000 pieces of raw hides, 57,000 pieces of tanned and dressed hides and 81,000 pieces of unwrought leather. The value of exports amounts on an average to Rs. 17·5 lakhs per annum and imports to about Rs. 7 lakhs.

CHAPTER II.—PREPARATION FOR MARKET.

The hide of a dead or slaughtered animal is a highly perishable product and recent investigations show that noticeable decay in it occurs within an hour onr two after the death of the animal. The ideal arrangement would be for tanners to receive freshly slaughtered hides that have not been subjected to any preservation or cure. They could then treat them in any way they liked and would have the full control over the process from the very start. But under practical conditions this is not possible, except in the case of indigenous tanners who handle one or two hides at a time and may be able to subject them to the tanning process, without the primary preservation or cure. Invariably a very large proportion of the hides produced pass through various intermediaries and markets, undergo handling several times, remain in store for some months and are transported over long distances, sometimes even overseas, before they reach the tanners and receive the first process of tanning. In the circumstances, almost all hides have to be suitably preserved. It is true that a naturally poor or defective hide cannot be much improved even through expert handling or proper preparation ; but through faulty flaying and processing, a first class hide can be completely ruined, rendering it unfit for anything but the making of glue, etc. The proper preparation of hides for market is, therefore, of considerable importance and is discussed here at some length.

A.—Flaying.

The preparation for the market commences with the removal or taking off of the hide from the dead or slaughtered animal. This is called " flaying " and is the first operation that is performed on the hide. Besides this, it includes the operation connected with trimming the hide to proper shape, dressing off the extra flesh and fat and rendering it free of foreign matter prior to drying or salting. Flaying may cause considerable monetary loss if not performed carefully. Many hides, otherwise good, are reduced in value and utility due to a little carelessness in this operation. Defective flaying has been the cause for complaint, to a more or less extent, in pratically all countries. In late years, however, some of the other countries have taken steps to improve matters considerably, *e.g.*, in certain European countries all flaying has to be done by machines and not by hand.

Knife-cuts and gougings, which may sometimes be deep enough to make holes in the hides, are signs of bad flaying. Knife holes naturally cannot be disguised in finished leather but if the leather is used for making small goods such as boots, shoes, etc., the advance effects can be neutralised to some extent by careful cutting of the required components. When, however, the leather is required for articles such as belting, straps, etc., which have to undergo sharp or sustained strains, the presence of even shallow flay cuts reduces the tensile strength of the article and consequently its value, to a considerable extent. Wherever larger pieces are required, *e.g.*, in the making of suit cases, upholstery, etc., the presence of knife holes in leather renders it useless for the purpose. It is seen, therefore, that the difference in the utility, and consequently the value, of leather obtained from properly as compared with poorly flayed hides is considerable. The cost of tanning is, however, the same in either case. The tanner cannot, therefore, pay as much for a badly flayed hide as for a well flayed one ; and where the system of purchasing on a flat basis prevails, such as is generally the case at the slaughterhouses and primary hide markets in India, it is clear that the buyer must make necessary allowances for the proportion of badly flayed hides in quoting the prices. The general effect of this practice is that the better flayed hides do not fetch the premium due to them.

To some extent, the reason why the standard of flaying does not improve readily or universally is, because most of the butchers, flayers or *chamars* are too backward and ill-informed to realise that the losses caused by bad flaying must, in the end, revert to them. The general practice of selling the hide when the animal to be killed is still alive, is also responsible for leaving no incentive for careful flaying as the hide, before it is flayed, becomes someone else's property and it hardly matters how the operation is done. Besides, general carelessness on the part of the flayers, absence of a system to prevent inexperienced flayers from operating at slaughterhouses, lack of supervision over the flayers, use of unsuitable knives, insufficiency of space required for the operation, inadequate arrangements for suspending or hoisting the carcass, poor lighting at the slaughterhouses particularly when the work is to be done in dark hours, payment of flaying charges on contract or piece wage basis, scraping off a part of the hide itself to give a neat and trimmed appearance to the meat at the expense of the hide, etc., are the other factors which are responsible for hurried, careless, improper and defective flaying of hides in India.

(1) Hides damaged by defective flaying.

On several occasions in the past, complaints have been recorded about the unsatisfactory flaying in India but as far as could be ascertained, no estimates are available to show the loss caused to the country on this account In recent years, however, under the AGMARK hide grading scheme,* records of the hides put in a lower grade owing to flay marks and knife cuts have been regularly maintained and the figures are reproduced below :—

---

*The details are described in the chapter on " Quality and Grading of Hides ".

Number of hides reduced in grade owing to flay cuts during the first year of the working of AGMARK hide grading stations.

Grading station.	No. of hides graded.	No. of hides bearing flay cuts, etc.	Percentage of damaged hides.
Bandra (Bombay)	47,400	15,172	32·0
Agra	24,328	3,728	15·3
Garden Reach (Calcutta)	28,648	6,944	24·2
Tangra (Calcutta)	23,269	4,554	19·6
Delhi	57,283	7,193	12·6
Total ..	180,928	37,591	20·7

It is seen that nearly a third of the hides produced at the *Bandra (Bombay)* slaughterhouse were damaged by flay marks and cuts. On the other hand, only 12·6 per cent of the *Delhi* slaughtered hides had flay cuts. To some extent the higher percentage of cuts and flay marks at *Bandra* is due to the combined influence of the system of fixing hide prices three months in advance and that of working in uncongenial hours and conditions. The slaughterings at *Bandra* commence at 5 in the evening and flaying continues till about midnight or even early part of the next morning. On the other hand, at *Delhi* the slaughterings and flaying take place between 5 A.M. and 10 A.M. and the hides are always sold after they are flayed when they are carefully examined by the buyers.

The table shows that at the five slaughterhouses under reference at least 20 per cent of the hides are damaged due to defective flaying. This is the position at important slaughterhouses where a higher standard of technical skill can be reasonably expected. But only about 30 per cent of the slaughtered hides pass through urban slaughterhouses whereas 70 per cent are from animals slaughtered and flayed in the villages and at smaller slaughterhouses, where conditions for obtaining good results are even less favourable. The village flayers may have more leisure but they do not have the same amount of practice or experience as the flayers working at the urban slaughterhouses. Thus, it could be safely presumed that out of 66 lakh slaughtered hides produced annually in India, approximately a third or about 22 lakh hides are damaged on account of defective flaying. In some cases, the difference in price for the same class or types of badly flayed and properly flayed hides, may be as much as Rs. 2 per piece, but assuming that the difference is only a rupee, the direct loss caused by bad flaying is approximately Rs. 22 lakhs per annum.

The foregoing position refers only to the slaughtered hides which comprise of only about a quarter of the Indian production. Out of 257 lakh hides produced per annum, as many as 191·2 lakhs are fallen hides from dead animals. The conditions under which the dead animals in the villages are flayed are generally even worse than at the slaughterhouses, but due to the fact that the meat of a dead animal is considered as carrion and has no value, no attempts are made to preserve its appearance at the risk and cost of the hide, as is the case with animals killed for food. Thus, due to this one factor alone, the fallen hides are generally free from flay cuts, although some of them also may be badly cut due to inexperience. They have, however, a serious defect of a different kind, namely, that too much of flesh or fat is left adhering to the hide, which renders its uniform preservation difficult. The fallen hides accordingly show signs of putrefaction in places where the adhering tissues are heavy. Thus, here also there is a loss by way of reduction of the value of the hide, and as their gross number is much larger than that of the slaughtered goods, the aggregate loss caused by their defective flaying is quite appreciable. Even at 8 annas per piece and, say, on only 50 per cent of the fallen hides, the annual loss due to this amounts to about Rs. 47 lakhs. It is, therefore, seen that only on account of one factor, *viz.*, defective flaying, the industry suffers a loss amounting to about Rs. 70 lakhs per annum.

(2) REDUCTION IN FLAY CUTS.

It must be confessed that under practical conditions it may not be possible to prevent the loss entirely. It is also possible that the measures taken to rectify it may cost more than the present amount of loss. Further, as the loss is not felt by any single individual, or even a section of the community, there is difficulty in impressing upon the trade the value of improving the flaying in a general way. But there is little doubt that much could be done by way of reducing it considerably, at least at the larger city slaughterhouses, where the taking of remedial measures is not a hopeless task. In fact, it is the experience of other countries that the payment of a suitable premium to the flayers for better flayed hides and the organising of competition in flaying, etc., results in improving the quality of hides. The first method, *viz.*, the payment of premium on properly flayed hides, was accordingly tried at the AGMARK hide grading stations located at some of the larger slaughterhouses in India. It gave encouraging results. The table below gives the figures of the achievements within a short period of 2 years.

Improvement in flaying achieved through payment of premium to flayers at AGMARK hide grading stations at Delhi, Tangra, Agra and Garden Reach.

Year.	Percentage of hides damaged by flay cuts.
1937 (1st year of the scheme)	20·7
1938 (2nd year of the scheme)	16·7
1939 (3rd year of the scheme)	10·6

The figures are compiled from weekly returns furnished by the grading stations named above and represent about 1·4 lakh hides graded each year. The amount of premium varied from 1½ pies to 6 pies per hide according to its grade.* The premiums were paid on all hides free from cuts and flay marks, except those which were classified as "Rejections". A flayer generally received an extra remuneration of about Rs. 3 to Rs. 5 per month. His usual wages ordinarily amount to Rs. 25 to Rs. 30 per month. The amount spent on premiums during the 3 years under review was approximately Rs. 5,000 or only about 2·3 pies per hide. But this resulted in saving about 20,000 hides from being damaged through cuts and flay marks during the 3 years and the net gain to the trade was many times more than the amount of premium paid. This was achieved with the existing staff of flayers—efficient and inefficient.

Other suggestions for improving the flaying of hides are dealt with in a subsequent section.

B.—Curing.

(1) PROCESSES ADOPTED IN THE TRADE.

It has been pointed out that significant decay in the hide commences within an hour or two after the death of the animal. The decay is due to bacterial as well as chemical action. Bacteria generally attack the flesh side of the hide and multiply rapidly. They emit a fluid which liquifies the hide substance and transforms it into a compound which is easily soluble in water. The first obvious sign of decay is the loosening of the hair follicles, technically known as "hair-slip". The hide can be protected from putrefaction either by treating it with some substance so that the bacteria cannot attack the hide substance or by removing the moisture from it to such an extent as to inhibit the action of bacteria.

The type of cure depends upon the quality of hide, climate, the materials available for curing, the length of time for which the cure is required, nature of the requirements of the local tanners or of the shippers for meeting the demands of the markets overseas, etc.

The commonly adopted cures for the Indian hides are drying them in the air without application of any curing agent, (*a*) unframed and (*b*) on frames. These may be treated with arsenic to prevent damage through insects, etc. When a salt cure is given they may be prepared and finished in (*a*) wet or (*b*) dry condition. There is generally no difference in the type of cure adopted for kips or buff hides but for slaughtered and fallen hides different types of cures exist. There is some difference of opinion as to which is the best method of curing. The local tanners place hides in the following order of merit : (*i*) green, *i.e.*, untreated, straight from the slaughterhouse, (*ii*) wet-salted, which remain wet and pliable and take to tanning easily, (*iii*) dry-salted, as being generally better processed than plain dried hides, (*iv*) dry-framed and arsenicated and (*v*) air-dried unframed (*sukti*) hides. On the other hand, the shippers who cater for the needs of the export markets prefer a dry cure—with or without salt—for convenience of handling, packing and less weight to transport. The main point, however, is the proficiency with which a cure has been done rather than its type and it is here that there is considerable room for improvement in several directions.

---

*For A grade—6 pies ; B grade—3 pies and C grade—1½ pies per hide.

The table below gives approximately the number of hides cured by the four main methods in different parts of India. The figures are only approximate and show the position in years preceding the outbreak of War in 1939.

Curing of hides by different methods.

(In lakhs).

———	Unframed dry or *sukti*.	Dry-framed.	Wet-salted.	Dry-salted.	Total production.
Kashmir	2·30	*Neg.*	*Neg.*	*Neg.*	2·30
North-West Frontier Province	0·70	0·90	0·20	0·40	2·20
Punjab	7·22	3·37	0·63	1·48	12·70
Sind	1·53	*Neg.*	0·57	*Neg.*	2·10
Bombay Province ..	6·23	*Neg.*	3·97	*Neg.*	10·20
Mysore State ..	0·40	*Neg.*	3·80	*Neg.*	4·20
Madras Province ..	20·95	*Neg.*	32·75	*Neg.*	53·70
Hyderabad State ..	10·96	*Neg.*	0·85	3·59	15·40
Central Provinces ..	16·56	0·60	2·14	*Neg.*	19·30
United Provinces ..	8·70	3·60	8·80	*Neg.*	21·10
Bihar and Orissa ..	12·00	2·50	13·10	*Neg.*	27·60
Bengal	13·05	*Neg.*	18·10	13·75	44·90
Assam	1·05	*Neg.*	1·15	2·50	4·70
Other areas	23·66	2·02	11·12	*Neg.*	36·80
Total (India) ..	125·31	12·99	97·18	21·72	257·20
Percentage to total hide production.	48·7	5·0	37·8	8·5	(100)
Fallen hides.					
Number	124·09	3·67	53·40	10·04	191·20
Percentage to total cured by the method.	99·0	28·3	54·9	46·2	74·3
Slaughtered hides.					
Number	1·22	9·32	43·78	11·68	66·00
Percentage to total cured by the method.	1·0	71·7	45·1	53·8	25·7

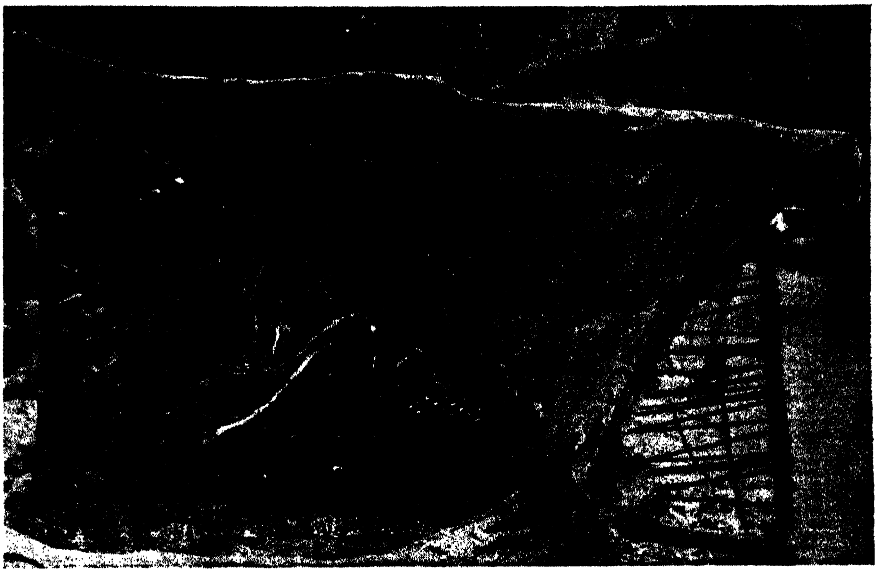


Plate I.— Nearly 12·5 million or approximately 49 per cent of the Indian production of hides are prepared as *suktie* or air-dried without stretching them, as shown in the picture.

Plate II.— About 1·3 million hides are prepared by stretching them on frames and drying them in shade or sun. Subsequently they are "arsenicated" also.

Plate I.— Dry-framed buff hides being prepared on a large scale at *Saugor (Central Provinces).*

Plate II.— Another method of preparing dry-framed hides in the shade in Burma.

(2) UNFRAMED DRY HIDES (SUKTIS).

Drying the hides in the sun or shade, *i.e.*, evaporating the natural moisture of the tissues stops the process of putrefaction. If properly prepared, these hides can be kept for a fairly long period, but in the process of tanning they are not easily softened again. The higher the temperature in drying, the greater the difficulty in subsequent softening. The air-dried stocks become almost as hard as stone and for that reason, these hides are often called " flint-cured ".

The unframed dry hides or *suktis* are prepared by merely spreading them on the ground, flesh side up, for 8 or 10 days according to weather conditions. At times the hides may be pegged on the ground or stones may be placed on them to keep them flat. In certain parts they may be dried over low bushes or by throwing them over branches of trees, etc.

It is seen that this method of curing is the simplest and hardly costs anything. The weight is reduced to the minimum which also helps in transport. But it is not one which gives good results, in selection, grading or tanning. In their preparation, these hides are never washed before drying and after drying they become crumpled and do not possess the proper shape which is valued so much by the tanners (see plate I facing page 64). They are also improperly trimmed and have flesh, mud and vegetable matter adhering to them. *Sukti* hides should be kept from getting damp during storage or transport ; otherwise, putrefaction readily sets in. Further, hides produced for market in this manner are liable to show defects known as " blisters " which mean that the drying has been uneven and decay has set in between the inner and outer surfaces of the hide. This is generally detectable only after the hides have undergone soaking at the tannery and often, as many as 25 per cent in a lot may reveal this defect.*

It is, however, seen from the preceding table that this method is extensively used for curing of Indian hides and as many as 124 lakh hides or about half of the annual production is prepared in *suktis* for internal consumption as well as for markets overseas. In drier regions, almost all the fallen hides are cured in this way. On the whole, very few (about 1 lakh only) slaughtered hides are prepared as *suktis*. In *Kashmir State, the Punjab, the Central Provinces* and *Hyderabad State*, this method of curing is more common than in the other parts. Nearly 50 per cent of the raw hides exported from India consist of *suktis* and this naturally accounts for the generally poor reputation of Indian hides in foreign markets.

As already mentioned, hardly any cost is incurred in the preparation of *suktis* apart from the time spent on them by the *chamars* or their women folk and children. Generally, the weight of a *sukti* hide is about 40 per cent of the green weight of the hide, that is, the weight after flaying.

---

*Report on the Preparation of Empire Hides and Skins (1937).

(3) DRY-FRAMED HIDES.

The method of drying hides by stretching them on suitable frames is easy, inexpensive and requires only a little extra care to turn out fairly good material. Hides cured in this way are considered superior and fetch better prices than the *sukti* hides described in the preceding section.

The method followed in drying hides on frames is generally identical in all parts of India. Raw green hides are trimmed at the edges and superfluous flesh, etc., are removed by scraping. In the case of kips they may be even washed to remove blood, dung, etc., but buff hides are seldom washed. They are generally wiped with a piece of cloth or a handful of straw. It is said that by washing the buff hides, they lose the reddish tinge on the flesh side which is considered a sign of freshness. The hides are then stretched and secured on wooden or bamboo frames by means of strings and are left in the sun for 2 to 5 days until they are properly dried. The frames are always arranged in an incline so that the rays of the mid-day sun do not strike them vertically (see plate II facing page 64 and plate I facing page 65). This helps to dry them gradually which is conducive to proper curing. Unless the weather is inclement, the frames are kept out in open during the nights also. Thereafter, the hides are removed from the frames and are folded down the backbone, hair-side in. In folding, care must be taken, for if they are too dry or if the folding is done with force, the grain may crack down the fold, leaving a long scar in the finished leather. They may be further dried for a day or two in the folded condition, after which they are ready for baling or transport.

Out of about 13 lakh hides cured annually by the dry-framed method, 9 lakh pieces are drawn from slaughtered goods and only 4 lakhs from the fallen stock. The method is most common in the *Punjab* and the *United Provinces.* As many as 12 lakh pieces are exported and only 1 lakh dry-framed hides are used for tanning in India.

The loss in shrinkage between green weight and dry-framed weight is the same as in the case of *suktis,* namely, about 60 per cent of the green weight. The cost of dry framing is estimated to be about 1 anna per hide in the villages and about 2 annas in the urban areas. This covers labour charges on cleaning, trimming, framing, etc., and the depreciation on the frames. Properly made frames cost less than a rupee each and last for a fairly long time.

(4) ARSENICATED HIDES.

Dry hides, framed or unframed, without being treated with salt or other preservative, are liable to be attacked by insects during storage or transit. Of these, the skin, hide or leather beetle (*Dermestes vulpinus*) is most common and the grub devours the whole fibre tissue of the hide leaving only the epidermis or the thin outer layer. Largely in order to prevent the loss from this grub, it is common to treat or " poison " the dry hides with a solution of sodium arsenite which is highly toxic to such pests.

The stock solution is made by dissolving 10 lb. of caustic soda in a small quantity of water. This causes the water to become hot.

While it is still hot 35 lb. of white arsenic are stirred into the solution. The quantity is made up to 50 gallons with cold water. This stock solution is diluted 30 times in preparing the immersion bath for the hides. The arsenic bath, prepared as above, contains approximately 0·25 to 0·3 per cent of sodium arsenite.

The treatment is given by immersing or dipping each hide for, say, 1 to 2 minutes in a trough containing the solution. The hides are subsequently re-dried in the sun or shade before packing. Hides treated in the above manner are called " arsenicated ". Generally all hides for export are treated in this way and the cost works to less than 1 pice per hide. The standard formula is not always followed and the protection may, therefore, not be complete in all cases. The presence of a small amount of poison in the form of arsenic on the hide does not interfere with tanning, but trimmings from such hides can be used only for making glue as it is not advisable to use them for making edible gelatine.

(5) SALT CURED.

As the name suggests, in this cure salt is used as the preserving agent. Certain patented preparations have also been tried from time to time in several countries, but salt is so far the best and cheapest material for universal use in curing hides. The curing is based on the same principle, namely, that of rendering the material non-putrescent by drawing away part or whole of the natural moisture of the tissues, but in addition, the hide is subjected to the preservative action of the salt. Salt is not a disinfectant fatal to putrefying bacteria, but if applied before decay has set in, it protects the hide from bacterial infection. It is, therefore, essential that salting should commence soon after the hide is flayed, but not before the animal heat is given off. In order to get full benefit of the cure, the hide must be clean and free from blood, dirt, etc., before salting. Its efficacy also depends upon the condition of the salt itself, type and quantity used and the thoroughness with which it is applied to the hide. Impure or unclean salt results in stains which become perceptible only during tanning.

In India three types of salt are generally used for curing. The table below gives their approximate composition and prices.

Approximate composition and prices of Indian salts.

Type of salt.	Percentage composition.					Prices per maund at the source of production.		
	Sodium chloride.	Sodium sulphate.	Magnesium sulphate.	Other constituents.	Impurities such as sand, earth and organic matter.	Basic price.	Duty (for edible purposes).	Total.
						Rs. A. P.	Rs. A. P.	Rs. A. P.
Sambhar	99·0	trace	..	trace	trace	0 4 3	1 9 0	1 13 3
Lahori	98·5	..	..	(calcium sulphate 1·0).	trace	0 4 3	1 9 0	1 13 3
*Khari**	..	35·0	40·0	..	25·0	0 11 0	*Nil*	0 11 0

******Khari*** salt may contain sodium chloride also.**

The source of the *Sambhar* salt is the *Sambhar Lake* in *North-eastern Rajputana*. In composition it is 99 per cent sodium chloride and has only traces of other constituents or impurities. It is obtained by evaporation of brine from natural underground reservoirs and is a good medium for curing. *Lahori* salt is obtained by mining and crushing boulders of rock salt and is mainly sodium chloride. The salt mines are situated at *Khewra* in the *North-West Punjab*. Provided it is finely ground and free from impurities it is considered as good as *Sambhar* salt for curing. Rock salt is, however, liable to be contaminated with iron which causes stains on the leather. Both the above types of salt are edible and are commonly used for human consumption in places where sea salt is not available. The *khari* salt, on the other hand, is inedible and its use for curing hides is perhaps peculiar to India. It is used extensively for curing in the eastern provinces of *Bengal, Assam,* parts of the *United Provinces* and *Bihar*. It is available in *Bihar* in large quantities. It is generally a combination of sodium sulphate and magnesium sulphate and contains as much as 25 per cent insoluble impurities in the form of sand, earth, etc. For dry salt curing this material is considered to be superior to *Lahori* or *Sambhar* salt particularly in the humid regions of *Bihar* and *Bengal*. However on account of the large proportion of clay, it affords an excellent opportunity for those who wish to increase falsely the weight of hides.

Information is not available as to the extent to which marine or sea salt, obtained by evaporating sea water, is used for curing of hides in India and further enquiries on the subject are indicated. It is, however, reported that sea salt should never be used for curing of hides or skins as, in the first place, it is heavily contaminated with organisms which cause " red heat " and secondly, for a curing salt it contains too much magnesium chloride. The presence of the latter constituent helps to retain moisture in the salt and assists the growth of halophalic (salt-loving) organisms, which find the hide an excellent medium for their multiplication and its destruction.

The salt cure is generally carried out by two methods, (*a*) by wet and (*b*) by dry-salting the hides. Pickling and brining the hides are also done but these methods are not popular in India. The details of the two main methods are given below.

(*a*) *Wet-salted.*—There are several methods by which wet-salting can be carried out but the common method adopted in India is that of salting the hides in piles. This is done by spreading them one over the other, flesh side up, on the floor or on wooden frames or on bamboo matting in such a way that the pile is slightly inclined to assist drainage. In this cure also only the kips are washed but the buff hides are generally cleaned with a piece of cloth, etc. After spreading a hide flat, salt (powdered) is rubbed in by hand on the flesh side. Thereafter, another hide is placed over the first salted one and the operation is repeated. This continues till the pile consists of 15 to 20 hides. Salt dissolves in the natural moisture of the tissues and helps the drainage of animal fluids. Generally, the next day another application of salt is given and a new pile is made, but this

A pile of buff hides after wet-salting is over.

Plate I.— This is how the dry-salted hides are prepared in *Bengal.* The *khari* salt solution is applied to the flesh side only.

Plate II. · Dry-salted hides being dried in the sun.

time the topmost hide is laid at the bottom and so on. Generally, a quarter of the total quantity of salt to be applied in full cure is used on the first day, half the quantity on the second day and the remaining quarter is applied on the third day. At times, the operation is completed in two applications only. The hides are ready for despatch in 4 to 5 days. If the wet-salted hides are to be stored for a longer time, they are generally turned over at least twice a week during summer and once a week during winter. If and when moulds develop on stored wet-salted hides, generally during the rainy season, they are cleaned with a piece of gunny.

In wet-salting, the saline liquor permeates the hide which helps to drain off a large proportion of natural moisture and blood. But some saline moisture is still retained and the cured hide remains in a pliable condition (see plate facing page 68). It does not become as hard as in the case of dry cures, with or without salt. It is claimed that under favourable conditions, this cure may last for several months but in a warm country like India, it is not advisable to keep wet-salted hides longer than one or two months.

Out of 257 lakh hides produced annually in India, about 97 lakhs or nearly 38 per cent are prepared as wet-salted goods. Nearly half of these are from slaughtered animals and the other half from fallen stock. This cure is popular in almost all parts of India, but the *United Provinces*, *Madras*, *Bengal*, *Bihar* and *Orissa* are the largest producers of wet-salted hides and collectively account for more than 75 per cent of the total production. Very few of wet-salted hides are exported on account of their extra weight and difficulties of packing. Consequently, most of them are used by Indian tanners.

The cost of wet salting can be divided into two main items, *viz.*, the value of salt used and the labour charges. While the latter item is more or less a fixed factor, say, 1 to 2 annas per hide, the former varies considerably due to differing quantities of salt used per hide. Opinions on the subject are divided. The impression gathered by the Hide Cess Committee (1928), based on the evidence of witnesses examined, was that for proper cure the quantity of salt should be about the same as the weight of the hide. It is assumed that by the word " salt " they did not mean the *khari* salt, which contains 25 per cent impurities. On the other hand, results of recent trials carried out in Australia show that a hide should receive a dressing of salt in amount equal to only one-third of its green weight. Calf skins may require salt up to half their weight.*

The shrinkage between the weight of green and wet-salted hides is considered to be generally 30 to 40 per cent but a recent experiment carried out at *Delhi* showed that in the case of buff hides the shrinkage was 28 per cent and in the case of kips, it was 25 per cent of their slaughterhouse weight, on the eighth day after the cure was started.

---

*Journal of the International Society of Leather Trades' Chemists, 1935 (page 376).

(*b*) *Dry-salted.*—The general method practised in *Bengal* is that the *beoparis* or dealers, on receipt of the village hides—fallen, slaughtered, partially salted or in semi-dry condition—first soak them in water for 12 hours or so and then clean them. These may even be trimmed or fleshed, if necessary. After that, *khari* salt in the form of a heavy solution, is applied with the help of a brush on the flesh side. They are then left in the sun to dry (see plate I facing page 69). At times the hides may be stretched on frames, but generally they are spread out on the ground, flesh side up. During the course of the day, two more applications of the salt solution are given. In the evening they are collected from the drying yards and are brought under cover, folded lengthwise flesh side in, and are stacked in piles of 20 to 30 pieces each. In this condition they are left undisturbed for 2 or 3 days after which they are opened out and completely dried (see plate II facing page 69). At this stage 2 or 3 further applications of salt may be given. Thus, by the time the process is finished something like 6 applications of salt may have been put on the hides. Generally, an expenditure of 3 to 6 annas per hide is incurred on this method of cure according to the quantity of *khari* salt used and wages for labour prevailing in rural or urban areas.

The dry-salted hides are invariably sold on weight basis. Here, therefore, the cure is often abused for the purpose of " loading " the hides by plastering them with extra large quantities of salt and even with other materials as mud, sand, etc. This aspect is, however, discussed further in the chapter on " Quality and Grading of Hides ". It is difficult to indicate the normal shrinkage in dry-salted hides as a lot depends upon the amount of " loading " that has been done. Normally the hides weigh about half the green weight.

Dry-salted hides do not become so hard as those dried without salt. These hides soak back readily and respond well to the tanning process. This type of cure renders them much more resistant to attacks of insects than ordinary dry hides and makes them lighter than the wet-salted goods. Apart from the practice of " loading ", to which this cure is particularly susceptible, it is, on the whole, probably the best cure for keeping the raw material in a good condition for a long time, and is admirably suitable for export.

About 22 lakh hides or about 8 per cent of the annual Indian production is made into dry-salted goods. Of these about 10 lakhs are fallen hides and the remaining are slaughtered. Nearly 80 per cent of the stock is exported. Out of 22 lakh hides, about 19 lakhs are cured by this method in *Bengal*, *Assam*, *Hyderabad State* and the *Punjab*. *Bengal* alone prepares nearly 14 lakh dry-salted hides per annum.

C.—Issue of duty-free salt.

In accordance with the Indian Salt Act, 1882, persons who require salt for industrial purposes, other than for use as an ingredient or preservative in any article of food or drink, can claim remission of duty paid on such salt. It has been indicated in a previous section that the basic price of salt, at works, is 4 annas 3 pies per maund and the duty on it is Rs. 1-9-0. Salt used for curing hides and skins also falls under the category of "industrial use" and the merchants can accordingly claim a remission of duty. Rules are laid down for obtaining the concession by *bona fide* users. The main features of the concession rules are that every concessionaire has to pay a supervision fee of Rs. 100 per year, to cover the cost of inspection of premises, goods, stocks of salt and of accounts kept in this connection by officials of the Salt Department. The stock of salt is to be kept in approved godowns and these are open to inspection. The accounts are to be maintained in the prescribed form and are to be kept up-to-date. The user of salt must purchase, in the first instance, duty-paid salt either from the government depot or any of the approved salt dealers. At the close of each half year he has to submit the application with necessary details, for claiming the remission of duty on salt already used.

Enquiries show that during 1939-40 there were only about 192 hides and skins merchants on the list of concessionaires in the Northern Circle of the Salt Department. For curing of both hides and skins they obtained approximately 205,500 maunds of salt. The Northern Circle includes the provinces of *Bengal, Assam, Bihar,* the *United Provinces,* the *Punjab,* the *North-West Frontier Province,* the *Central Provinces* and *Berar, Delhi* and *Ajmer-Merwara* and the Indian States adjoining them. Considering that in the above areas there are many places where the hides and skins are cured and at each place there are several merchants, it is obvious that only the larger merchants have taken advantage of the duty-free salt. Perhaps, one reason why a greater use of the concession is not made by the curers is the charge of Rs. 100 that each concessionaire has to pay annually as inspection fee.

The Hides Cess Committee in 1928 examined the question of duty-free salt and observed that the rules were generally sound in the case of larger type of establishments, but were altogether unsuitable for the small producers. As the salt should be applied to the hide as soon as it is flayed, it is important that the facilities of obtaining cheap salt should be extended to the small producers—*chamars*—and others who handle a few hides at a time. In order to get over the abuses to which the issue of duty-free salt is subject, *viz.*, its consumption and sale for edible purposes, some of the witnesses had suggested that the salt issued for industrial purposes should be denatured and rendered unfit for human consumption. The Salt Department itself has also felt some difficulty in keeping a proper check to see that the concession was not misused. To some extent, the evil could be checked if information was available regarding the correct quantity of salt required for curing, say, 100 pieces of hides by the different methods. In the absence of such data, the merchants at present can indent for any quantity of salt so long as they give a certificate in return to the effect that the salt was used for curing of hides and skins. The concessionaires are, however, required to maintain the number of hides or skins treated by them and a few figures collected from the office of the Salt Commissioner, Northern Circle, *Delhi,* are of interest. They pertain to the year 1937-38 and are given in the following table.

Quantity of salt used per hide by concessionaires at some of the places for preparing wet-salted hides.

	Per kip.			Per buff hide.		
—	In first application.	In second application.	Total salt used.	In first application.	In second application.	Total salt used.
On slaughtered hides at—	lb.	lb.	lb.	lb.	lb.	lb.
Lahore	9·4	8·2	17·6	9·3	8·2	17·5
Sialkot	7·8	1·0	8·8	..	..	..
Jhansi	3·0	3·0	6·0	4·6	4·5	9·1
On partially cured district hides at—						
Sialkot	..	..	..	7·5	1·0	8·5
Gujranwala	8·4	5·9	14·3	9·6	5·3	14·9
On mixed (slaughtered and country hides) at—						
Lyallpur	5·5	2·1	7·6	6·0	2·1	8·1
Montgomery	6·0	2·1	8·1	6·3	2·1	8·4

It will be seen that anything from 6 to over 17½ lb. of salt was used per slaughtered kip. In the case of *Gujranwala*, even for partially cured district hides, over 14 lb. of salt per kip were said to be applied. Other figures also show great variation and indicate that either some hides were " loaded " with salt or perhaps all the salt was not used for its proper purpose.

In view of the administrative and technical difficulties enumerated above, the Salt Department has since 1st April, 1940, made arrangements for the issue of " denatured salt ", exclusively for curing of hides and skins. Rules in this connection have also been made and are called the Northern India Industrial (Denatured) Salt Rules, 1939. Since these have come into force, the issue of ordinary salt and the system of remission of duty have been discontinued. Ordinary salt is rendered unfit for human consumption by mixing 1 lb. of naphthalene (commercial) and 0·005 lb. of blue or green water-soluble colour, with every maund of salt. Denatured salt could be had from any of the authorised dealers or direct from *Sambhar, Khewra* or *Salkia (Calcutta)* salt warehouses. But delivery from the above places is generally given in wagon loads and the salt has to be removed in distinctive red colour bags which also bear certain distinguishing marks. The present price at works is 9 annas per maund nett. For the use of denatured salt the applicant has not to pay the previous fee of Rs. 100 per annum, but the accounts, etc., for its use are to be kept in the same manner. The user has, however, still to obtain the licence for its issue from the works or the dealer and has also to give an assurance that he shall not render the denatured salt edible by any process.

The above change is a definite improvement over the previous arrangements and should, to an extent, help in increasing the use of salt amongst the small producers. It would, however, be useful if the Salt Department could arrange with the authorised agents situated in smaller places always to carry stocks of denatured salt, so that the small producers could use it with advantage for curing of hides and skins. But for this, the Department would have to make the agent responsible for keeping the necessary accounts, rather than the *chamar* or petty butcher who would actually use it. Unless this is done and denatured salt is made available in the villages without much restriction it is difficult to see how the *chamar* would ever be able to use it, although he needs it most.

It is understood that the Department is also considering the use of " bittern " salt, for curing of hides and skins, of which there are large deposits at the *Sambhar* Lake Salt Works. This is a by-product of the salt industry and contains large proportion of sodium chloride, some sodium sulphate and a littte sodium carbonate. Preliminary experiments made at the Bengal Tanning Institute, *Calcutta* indicate its suitability for curing hides as effectively as ordinary common salt. Being only a by-product, it might be possible to put it on the market at a much cheaper rate than even the denatured salt.

Throughout the world, salt is the most important agent for preserving the hides and tanners prefer this cure to any other. It is readily washed away in the process of tanning and green hides thus preserved turn out leather of good grain and quality. Therefore, any further measures that the Salt Department could initiate to make denatured or " bittern " salt available cheaply and readily, both to the small and large processors, would go a long way in improving the quality of Indian hides.

D.—Suggestions for improvement in flaying and curing.

(1) BRIEF REVIEW OF EFFORTS MADE IN OTHER COUNTRIES.

Organized efforts made in other countries for improving the general standard of flaying and curing have given encouraging results. In the United Kingdom, for example, district flaying competitions organized by the Master Butchers' Organization and the Hide Improvement Society have resulted in securing a definite improvement in flaying. The Society also employs flaying instructors for giving demonstrations at the slaughterhouses and the cost of this is defrayed jointly by the butchers and tanners, each contributing one penny per hide into a fund under the control of the Society. In Canada, the teaching of proper methods of flaying and preparation of hides forms part of the curriculum in agricultural schools and colleges. In Kenya Colony, iron-roofed sheds are provided for drying of hides in shade and this has considerably improved the quality of hides exported from that part of the world. In the same Colony several experiments have been conducted on improved methods of preparing dry hides and these are now fast replacing the unsatisfactory ones followed previously. In Malta flaying is done by expert butchers who are government employees and better quality hides are now being produced there. Other countries have also taken up the question of improvement.

(2) CONDITIONS IN INDIA AND THE GENERAL BACKGROUND.

The main causes responsible for defective flaying and curing of Indian hides, have been enumerated in the preceding sections. Their removal, even in part, would lead to a considerable improvement.

In the first place, it is emphasized that there are no large abattoirs in India, nor is their establishment at present feasible. The number of slaughtered hides produced daily at any one centre is accordingly much less than in other countries. With the fallen hides, conditions are even worse. Although their natural output is large, due to the vastness of the country, in initial stages, they are cured and collected in numbers not exceeding 5 to 10. For instance, out of about 257 lakh hides produced annually in this country, 224 lakhs are produced in rural areas. There are about 7 lakh villages in India which means a production of less than 3 hides per village per month. Many of these are utilised locally and never reach the market. The persons who are engaged in the early stages of the trade, namely, *chamars*, butchers, etc., are illiterate, backward and belong to a class of persons who are extremely slow in adopting improved methods. They are not always able to appreciate measures designed for their own benefit. Except for some sporadic efforts made in the *United Provinces* for a peripatetic hide flaying party to visit and give demonstrations at some of the slaughterhouses and a small amount of work done at the Bengal Government Tanning Institute, *Calcutta*, regarding the uses of salt in curing of hides as also the Central Government's experimental AGMARK hide grading scheme initiated in 1937, in which premiums are paid for better flayed hides, no trade organization or government department is actively engaged in improving the flaying and curing of hides. Some investigation work on warbles and ticks has also been done by the Imperial Veterinary Research Institute, *Mukteswar*, but it is purely of a research nature and has not yet been extended to field conditions. As early as 1917, the Imperial Institute Committee specially appointed for India, after an enquiry, felt that steps were necessary to introduce better methods of flaying and preparation of Indian hides so as to improve their quality and value. They suggested that the whole question of the improvement of raw hides should be carefully investigated in India, as there was no doubt that their value and quality could be much improved by proper treatment.* Even 23 years after, conditions are no better and defective flaying alone causes to the industry a loss estimated at about Rs. 70 lakhs per annum. The curing is equally bad and India is losing some of its old markets. At present it is hardly any one's business to attend to the various problems concerning this important industry. With such a background, it is advisable that in order to achieve some definite results efforts towards improvement should, in the first instance, be confined to the larger slaughterhouses and the main assembling markets only, which handle a fairly large number of hides.

---

*Imperial Institute, Indian Trade Enquiry : Reports on Hides and Skins (1920).

(3) IMPROVEMENTS IN FLAYING.

(*a*) *Licensing of flayers.*—Flaying is an operation which requires considerable skill and experience and if performed improperly, it ruins the hide and causes monetary loss to the owner and a huge national loss to the country. Notwithstanding this, at present there is nothing to prevent inexperienced or amateur flayers (often boys) taking independent charge of flaying an animal at the municipal slaughterhouses and causing damage to the hide. As far as is known, only at the *Bandra* Slaughterhouse at *Bombay* the flayers have to be registered, but this is only done with a view to avoiding congestion at the slaughterhouse. It has already been indicated that amongst the 5 main slaughterhouses, the standard of flaying at the *Bandra* Slaughterhouse was the poorest and as many as 32 per cent of the hides showed signs of defective flaying. Thus a mere registration of flayers is not helpful. The only useful step that could be taken to prevent the operation of novices taking independent charge of flaying, would be to license approved flayers (and beginners) operating within a municipal slaughterhouse. The licence should be issued after a test of proficiency, somewhat on the lines of the motor driving licence issued by the police authorities. The model rules for issuing licences, including particulars of proficiency tests that the flayers have to pass, could be worked out by a committee appointed by the Central Government in conjunction with hide merchants, Veterinary Officers, municipal authorities, butchers (owners of animals) and the flayers. One licensed flayer may be allowed to have only one " understudy " to operate with him but the former should be responsible for proper flaying. The number of licensees at a slaughterhouse should be so adjusted as to leave no possibility for neglect due to rush of work and enable the flayer to give sufficient time to each hide.

If necessary, special bye-laws may be introduced under the Municipal Acts to prohibit unlicensed flayers operating at the slaughterhouses. The licensing authority should be the municipality and there should be a committee at each slaughterhouse to examine flayers. It may be advantageous to introduce monthly wages for the licensed flayers, rather than a piece-wage system as prevailing at present. This aspect may also be covered by the bye-laws.

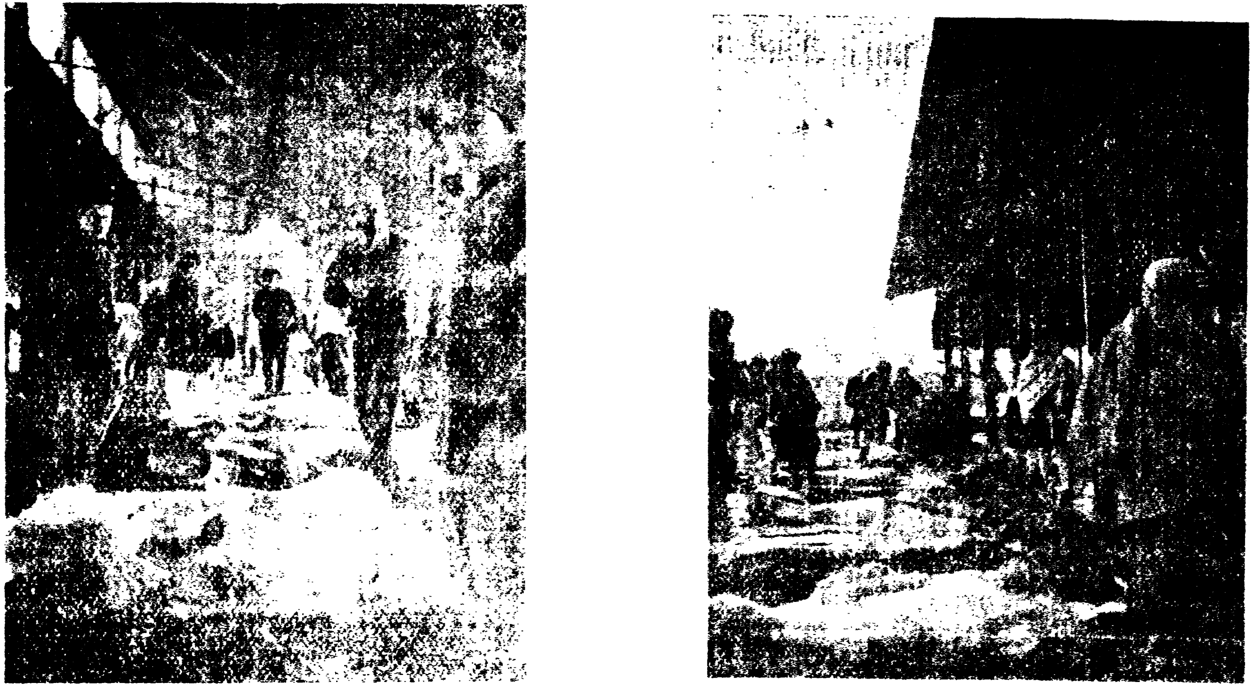
(*b*) *Improving the city slaughterhouses.*—The environment and facilities under which the flayers have to work have considerable influence on their efficiency. It would not be any exaggeration to say that the Indian slaughterhouses are, on the whole, a disgrace to the municipalities who generally own and look after them with but few exceptions. Apart from the fact that flooring, drainage, water-supply and lighting are invariably bad and defective, there is no provision for protection from crows, vultures, dogs, etc. There is also no control regarding congestion during working hours and hardly any facilities exist for hoisting the carcass or handling it during flaying (see plates facing page 76). Not infrequently there is merely a floor and a roof. Often the so-called slaughterhouse is only an open court-yard without pavement of any kind. The animal to be killed is dragged to the place where others are lying slaughtered or are being slaughtered.

In all modern slaughterhouses in other countries, this is strictly avoided and each animal is killed in an enclosed booth, or by itself. Thereafter it is hoisted by its hind legs and is allowed to bleed, which is essential both for producing good meat and good hide. While the carcass is so suspended, the flaying is done often by a team of flayers, in front of whom it is conveyed on overhead rails. One person may rip open the hide and is expert in that operation which helps to produce a good patterned hide, valued so much by the tanners and leather manufacturers. The next person may detach the hide around the belly and legs for which he may use special types of knives, with the proficiency of a specialist. The third flayer may detach the hide from the butt portion and the fourth may do the final take off. This system may not be possible at all Indian slaughterhouses, but at most of the larger ones, there are usually several butchers (owners of animals) each of whom gets 10 to 15 animals slaughtered daily. They also have 6 or 8 flayers engaged on flaying their stock, but there is no team work and each flayer completely flays a single unit. Provided there were arrangements for hoisting the carcass even without a moveable gear, 6 or 8 animals belonging to the same butcher could be hoisted up and the 3 or 4 flayers, specialists in their own part of work, could operate on these animals by turns and perform a really first class job. The under-studies, for example, might operate on the belly and the more experienced men on the back and the butt, which are the most valuable portions of the hide. With facilities and a certain amount of organization it is a matter which should be tried out in large slaughterhouses, *e.g.*, at *Bombay*, *Calcutta*, *Delhi*, etc., before it is condemned as being not feasible in India.

There are various other matters in which the construction of the slaughterhouse itself plays an important part in the production of good hide and also good clean meat. It is no doubt true that at the time when most of the present slaughterhouses were built in India, those built even in the Western countries were by no means ideal structures. But in late years considerable progress has been made in the slaughterhouse designing and now there are several types to copy, with suitable modifications for Indian conditions. The present Indian slaughterhouses have become obsolete and need remodelling. Most of the municipalities levy a slaughter fee and there should be no difficulty in recovering a substantial part of the cost of the new slaughterhouse within a few years. As far as is known, only the Delhi Improvement Trust has under consideration a slaughterhouse scheme wherein full consideration has been given for turning out good meat, hides and other slaughterhouse products. The proposal is likely to mature in the near future.

Apart from providing sufficient and comfortable lairage space for animals awaiting veterinary inspection prior to slaughter, the essential features or requirements of a modern slaughterhouse in India may briefly be set out as under.

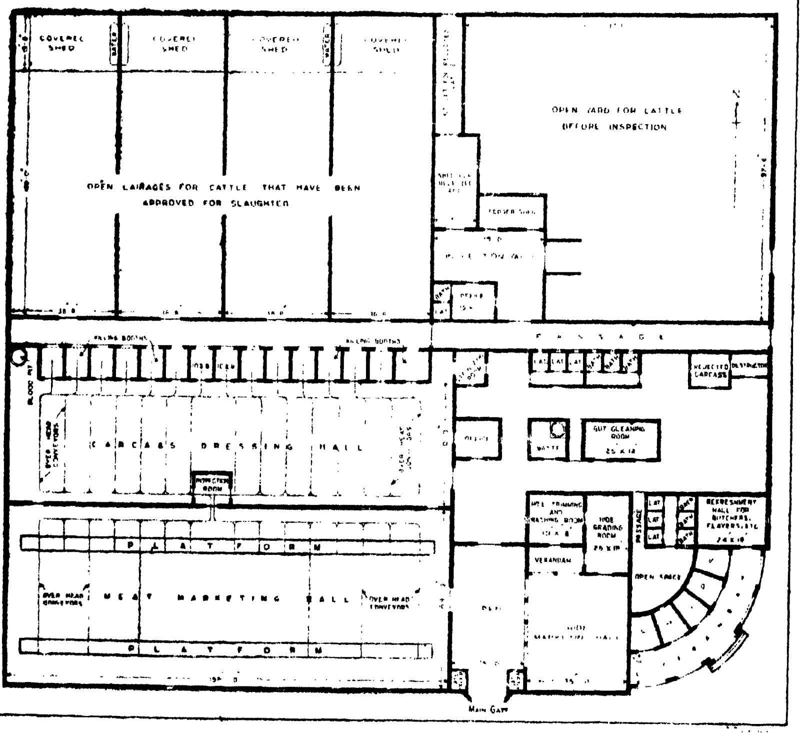
[Facing page 76.



Flaying of hides on the floor at the Delhi Slaughterhouse.

(Note the congestion.)

PLAN OF THE PROPOSED SLAUGHTER HOUSE AT DELHI.
FOR 400 CATTLE PER DAY.



(*i*) *General.*—The utmost attention should be given to obtain maximum and uniform distribution of light and ventilation, both artificial and natural. Floors should be well sloped and impervious but non-slippery. Walls should be faced with white tiles, to a height of at least 7 feet. Drains should be of adequate size, to carry away with ease all washings and sullage. Adequate supply of water should be laid for cleaning and washing of products and floors, walls, drains, etc. The structure itself should be of a covered type to prevent kites, crows, etc., entering it and should be designed to facilitate cleaning and being kept wholesome, under Indian conditions. The plinth area should be of a size to enable the day's slaughtering and cleaning of the premises to finish within 5 to 6 hours.

(*ii*) *Slaughtering booths.*—These may be about 10 feet square, that is, large enough to throw and slaughter one animal all by itself, without its being seen by others awaiting slaughter. There should be sufficient number of booths to prevent haste and confusion.

(*iii*) *Hoists and conveyors.*—The former is a simple arrangement of a pulley and tackle fitted in the slaughtering booth for hoisting the carcass and hanging it on the conveyor. The conveyors should be of overhead type on which the carcass is hung by the hind legs and is moved for performing subsequent operations on it.

(*iv*) *Trolleys for transport of offals and hides.*—The edible and inedible offals should be handled separately and should go to different sections for inspection and disposal. The hides should proceed to the trimming and washing rooms. The above operations should be done with the help of suitably designed hand-pushed trolleys running on rails instead of carrying the various components in hand or dragging them on the floor.

(*v*) *Preparatory departments.*—These should consist of suitable rooms of adequate size to enable cleaning, trimming, washing, grading, etc., of edible and inedible offals, hides, guts, head, feet, tail, etc.

A provisional line sketch of the general plan is attempted facing this page.* It would, however, be desirable to appoint a Central Slaughterhouse Committee consisting of specialists in slaughterhouse designing and construction, representatives of Public Health, Agricultural Marketing and Veterinary Departments, representatives of municipalities and at least three members from the hides and skins trade. For the guidance of the municipalities this Committee should draw out detailed plans and prepare estimates for slaughterhouses of different sizes and types. The committee should collect and study plans of slaughterhouses of different sizes in some of the countries abroad and particularly those situated in warmer countries, *e.g.*, South Africa, Mexico, Australia, etc. It would also be useful if working models showing the internal arrangements could be prepared to demonstrate them to the butchers and others. The

---

* Reproduced by courtesy of Mr. A. W. H. Dean, M.C., C.I.E., E.D., Chief Engineer, C. P. W. D., Delhi.

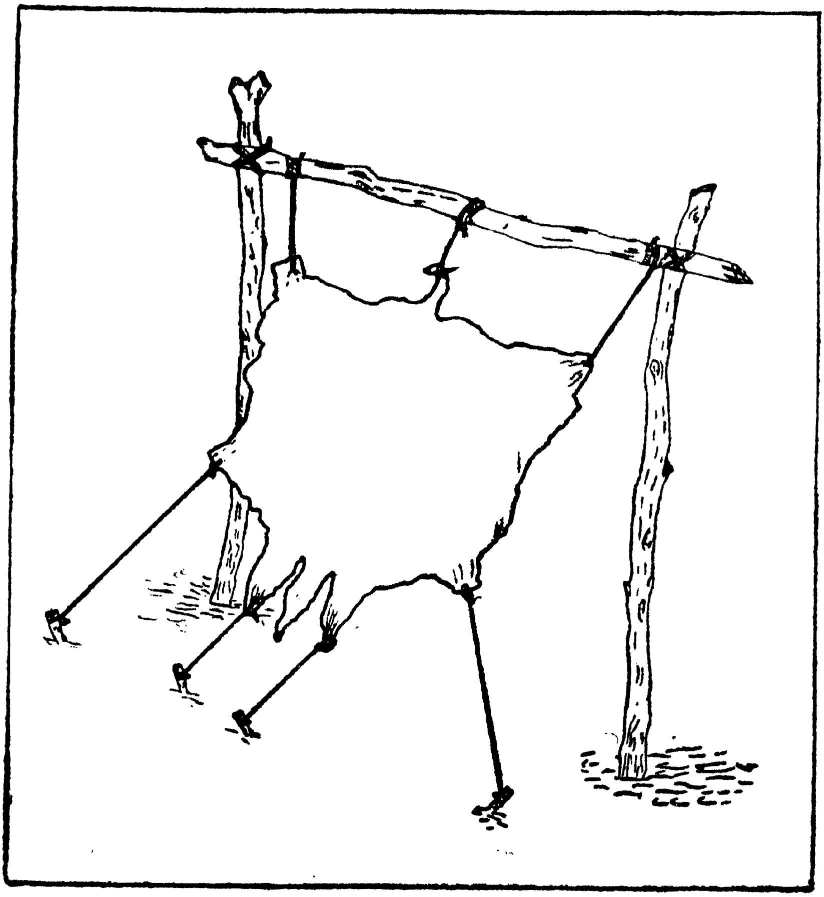
Committee might also draw up a set of model practical rules for the day-to-day working and management of the slaughterhouse. In this connection, " Model rules for meat inspection and the inspection of slaughterhouses and other regulations ", prepared by the Imperial Council of Agricultural Research in 1939 might also be examined. The Committee should suggest a type of organisation which should be set up by the municipality of a place to attend to all matters connected with the management of the slaughterhouses. The recommendations of the committee should be printed in the form of a report for the guidance of provincial governments, municipalities, etc.

(c) *Preparation of instructions for flayers, etc.*—The committee should also prepare a set of model and practical instructions on flaying and curing of hides for the guidance of flayers, curers and demonstrators employed under the peripatetic parties scheme outlined under items 3 (*f*) and 4 (*c*). The instructions should be embodied in a pamphlet, printed in as many local languages as possible. The booklet should be well illustrated with suitable diagrams and pictures. The instructions should indicate the standard of flaying and curing expected of the master flayers, curers and demonstrators who may be licensed to work at the slaughterhouses or sent round the villages with peripatetic parties for teaching the rural *chamars*.

(d) *Introduction of improved methods.*—The hoisting of the carcass and the flaying by a team of flayers has already been discussed. In some countries abroad, considerable strides have been made in the improvement of the flaying operation itself. For instance, the operation in some cases is done by pneumatic flaying machines and in others the hide is separated from the carcass through air pressure, without the use of knives. In France, the use of a wooden knife and a pounding hammer is now not uncommon. In other countries, again, the flayers use knives only for ripping the hide and thereafter, the hide is pulled off by the use of fists and elbows. In Germany, mechanical flaying machines, with the knife-edge protected like a safety razor, are used at most of the slaughterhouses. There are other innovations also about which information is not completely available. But these show that in other countries, for the sake of obtaining speed, minimising labour and protecting the hide from damage they have introduced methods other than flaying with ordinary knives.

The introduction of such methods in India can only be recommended after they have been tried in the hands of the Indian flayers. It is, therefore, suggested that the provincial Departments of Industries should make a special study of improved methods of flaying and, if need be, order for flaying machines of different types and try them under Indian conditions. These machines are not expensive. The electrically operated flaying machine commonly used in Italy and Germany could be had before the War for about £70. Manufacturers are even prepared to lend units for trial in India, free of charge for demonstration purposes. For Indian conditions, however, it would seem essential to have a hand-operated machine.

(e) *Payment of premiums for better flaying.*—It has been shown that if properly organised, this results in considerable improvement



The "suspension" method of drying hides. It has proved a success in other countries and is being commended to the Indian hide curer also.

Plate I (Java).— Cleaning and washing of hides with a view to removing blood, dirt, etc.

in so far as it possesses the virtue of winning the goodwill of the actual operators—a feature of some importance for the success of any development scheme. The question naturally arises as to who should pay the premium. For that, the Tanners' Federation of India, the various shippers and other local hide merchants associations should raise a " Hide Improvement Fund ".

(*f*) *Introduction of improvement in the villages.*—This matter is one on which it is rather difficult to offer suggestions. At places the conditions are such that none of the foregoing measures may even be practicable. The only hope is that if these measures are adopted at the larger slaughterhouses and if the village people concerned can see for themselves the advantages in the shape of getting better prices in time to come, ground can be prepared for introducing them in the smaller places, perhaps in a modified form. But until improvements actually commence at the larger centres, it is difficult to see how the villager will ever be able to get the slightest idea of what the defects are in his present methods.

There is, however, considerable scope for peripatetic demonstration parties giving actual demonstration of improved methods. In this way, it may be possible at least to introduce an improved type of knife with a rounded point and show its use. It may, however, be necessary, and perhaps desirable, to present the knife itself to the village *chamar*. The ripping open of the hide to produce a good pattern can best be shown by actual demonstration. The main point is that of continuity and repetition of such demonstrations. The other point is that the party should consist, not of town flayers but of village *chamars*, who have themselves received training on the right lines. For the sake of maintaining continuity and repetition economically, Directors of Industries might consider the possibility of having a demonstration film prepared showing the best method of removing the hide from a dead animal. The Provincial Marketing Officers should arrange for the better marketing of the hides produced under the guidance of demonstrative parties, so that the *chamars* and others come to realise the monetary value of the scheme and ultimately adopt improved methods in the preparation of hides of their own.

(*g*) *Improvement through the veterinary staff.*—All the provinces and major Indian States have a number of veterinary hospitals and dispensaries in-charge of Veterinary Assistant Surgeons. Their present number is reckoned at about 1,500 but they have yet to get themselves interested in the problem of improvement of hide flaying and curing. As many of the hospitals are in the villages, the veterinary doctors can render considerable help in doing propaganda and demonstrating improved flaying and curing to *chamars*, butchers and others. As a part of their work they should themselves flay a number of carcasses every year in their area of operation and also show improved methods of curing. For their guidance, a suitable bulletin could be prepared on the subject. The veterinary colleges too should consider the inclusion of " flaying and curing of hides " in their curriculum.

(4) IMPROVEMENTS IN CURING.

(*a*) *Improvement in preparation of sukti hides.*—50 per cent of Indian hides are cured by merely spreading them on the ground in the sun. This method produces very poor material. Under the direction of the Imperial Institute Advisory Committee (London) and in conjunction with the United Tanners' Federation, several experiments on air-drying of hides were undertaken in Kenya in 1932. These showed that it was not altogether necessary to dry the hides in shade. But it was most essential that the hides should be dried in a suspended position, clear of the ground, and they should be so suspended that the sun's rays struck them obliquely. They should also receive a certain amount of stretching to avoid their being crumpled and losing their shape. The Committee recommended what was known as the " Suspension " method. The method and equipment are shown in the sketch facing page 78.

It is seen that the equipment is very simple and is one which is within the reach of any village *chamar* in India. Two poles are to be fixed in the ground about 5 to 6 feet apart, according to the size of the hide. They should be in a line running east to west. A horizontal pole is then tied to them on the top about 5 to 6 feet above the ground. The hide is suspended on this pole by tying it at least at three places with pieces of rope. The portions of head and the fore shanks are tied to the four small pegs which are fixed in the ground. It is important that the hide does not touch the ground during drying. The pegs are placed on the line of the shadow cast by the horizontal pole at mid-day. The hide is thus stretched at an angle with the ground, flesh side uppermost. In this way, not only is the hide freely exposed on both sides for drying but even if it rains, the water can run off easily. Further, the rays of the mid-day sun strike it obliquely and their effect is less than if the hide was spread flat on the ground. The method is claimed to give results which are almost equal to those obtained by drying hides in shade or dry-salting them. The experiment actually showed that Kenya hides prepared in this way fetched 3*d*. per lb. more than the hides which were dried on the ground and which consequently suffered from " blisters ".

The suspension method is recommended for all hot countries where air-drying of hides is practised. Actually it is only a modification of the present method of preparing " dry-framed " hides in India. The latter has, however, an advantage in having a frame which can be moved from place to place instead of a fixed structure. But both methods appear to be readily adaptable for improving the quality of the many millions of *sukti* hides. The *chamars* can easily learn and follow these methods if demonstrated even just once. The organisations connected with rural uplift work should, therefore, pay special attention to this fruitful line of development, the adoption of which would directly benefit the poorer members of the villages.

(*b*) *Improvement in preparation of dry-framed hides—adoption of Java method.*—During the course of the survey, it was observed that some of the large tanners in India import dry-framed buffalo hides from Java, as they find them to be exceptionally well cured and good in quality. In fact, these hides are considered to be one of the best dry-framed hides in the world. The users in this country were, however, not aware of the method of cure adopted in the preparation of Java hides, and, accordingly, the Agricultural Marketing Adviser arranged to obtain the same from Java, through the Netherlands Consul-General in India. The method, together with seven photographs, is decribed below.

The green hides are washed thoroughly in clean water soon after flaying, in order to remove blood and adhering dirt. The washing prevents the impregnation of blood and dirt into the hide substance, which otherwise diminishes the efficacy of curing (see plate I facing page 79). In order to drain off the water, the washed hides are hung over for a short time, on a horizontal pole. Thereafter, notches are made all round the hide, at about 1″ from the edge, and at equal distances of about 8″. The distance may be shorter in the case of hides of irregular shape. When the holes are cut, a stick or piece of wood is held under the hide. This prevents the holes from being cut too wide (see plate II facing page 82).

The third stage is the fleshing of the hide which is done by spreading it over a large strong table with the flesh side up and by removing the superfluous flesh, fat and tissues, with a sharp crescent shaped fleshing knife (see plate III facing page 82). The operation is performed with great skill and care, so that a smooth surface is obtained without injuring or removing any of the hide substance. Now the hides are ready for putting on the frames, but before this is done, they are immersed for five to ten minutes in a preservative solution [1 part of commercial hide poison containing 50 to 60 per cent As_2O_3 (arsenic) with about 90 parts of water]. They are hung for some time above the arsenic bath for draining (see plate IV facing page 83). When the solution becomes dirty, it is replenished with a freshly made one, and the tank is properly cleaned to remove any fleshings, etc., that may be in it.

When the hides are sufficiently drained, they are stretched on large wooden frames by means of "S" shaped hooks (which are made by bending long nails) in the already existing holes or notches and by fastening these hooks with a rope round the frame. The corners of the frames are strengthened by providing supports (see plate V facing page 83). After the hides are properly stretched, the superfluous liquid is removed from both sides with a small wooden board, which also gives a fine glossy finish, both to the hair and flesh sides.

The hides are next placed for drying. Here also great care is exercised. Direct or bright sunlight is avoided as there is a possibility of the hides being overheated at certain places and becoming geletinous. In the morning or during the cooler hours of the day, the frames are placed flat, but during the day the frames are put in such a way that the sun shines obliquely on the hides (see plate VI facing page 84). Further drying is effected in covered sheds, which are specially built for the purpose (see plate VII facing page 84). There is no difference between the treatment of cow and buffalo hides, except that the latter takes a few days longer to finish.

When the hides are thoroughly dry, they are removed from frames and folded in two. The hides meant for export are again immersed for 1 or 2 minutes in bundles of about 5 pieces in a larger bath containing the arsenic solution and are dried in the sun before packing. This completes the poisoning process and safeguards the hides from attacks of vermin, etc. The loss in weight is approximately 66 per cent and 60 per cent respectively in the case of cow and buffalo hides.

From the above description and the photographs, it is clear that the curers in Java take a good deal of care and pride in preparing the hides for the market. It will be observed that, unlike the case in India, in Java great stress is laid on washing the hides and freeing them of all dirt, blood, etc. Fleshing is done on smooth tables and not on ground, as is often the case in India. There is a method and system even in cutting the holes in order to get a good pattern, and an evenly stretched and wrinkle-free product. In India the frames are always of bamboos which sag badly and do not serve the purpose well. In Java stout wooden frames are used, which are further reinforced at the corners. The use of hooks between the hide and the rope is unknown in India, although this greatly facilitates the stretching and saves the time and labour of passing a long rope through each hole. The drying is finished off under covered sheds and the product obtained is pliable, compared with Indian dry-framed hides, which are dried throughout in the open and are so hard that they are often called " flint " cured. Arsenicating the hides prior to framing them and rubbing down the hair and flesh sides with a smooth board are the other noteworthy features of the Java cure.

The process is commended for adoption in India as an improvement over the present haphazard method of preparing dry-framed goods. In order that the process may be copied to perfection, it would be desirable to compare the Indian cured hides with those originally cured in Java.

(*c*) *Establishment of Government Hide Curing Yards.*—With a view to extending the use of duty-free salt for curing hides and to bring this most efficacious curing medium within the easy reach of small-scale producers, the establishment of " Government Hide Curing Yards " on the pattern of the Government Fish Curing Yards in the *Madras Province,* is suggested. In that province nearly 110 fish curing yards exist, for the primary object of supplying to the fishermen duty-free salt for curing fish. The start in this direction was made by the Excise and Salt Department, but later on the control of these yards was handed over to the Provincial Fisheries Department. Each yard consists of an enclosure, about an acre or two in area. It has only one entrance and the passage to the yard is through a building which has an office room on one side and the salt godown on the other. For smaller yards, a Petty Yard Officer is the person in charge and is paid Rs. 20 per month. For larger yards, a Sub-Inspector on a higher scale of pay is provided.

The curers have to build for themselves small curing huts in the yard, in accordance with a plan given by the government. A yard may have anything from 5 to 120 curers and these are

Plate II (Java).— Preliminary removal of extra flesh and fat and the cutting of holes at the edges for fixing the hides on the drying frames later.

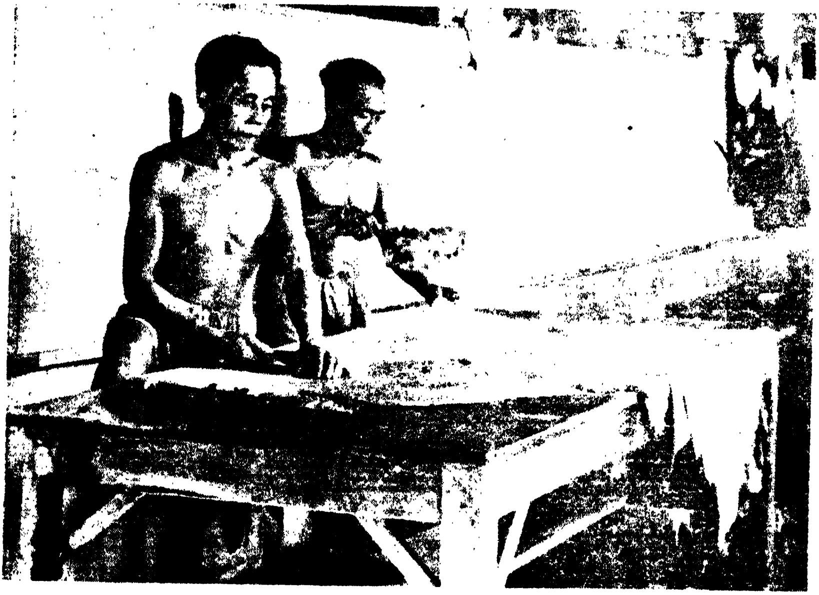


Plate III (Java).— Fleshing of hides on the table for removal all flesh, fat, and tissues. Note the crescent shaped knife used in the work which requires great skill.

Facing page 83.]

Plate IV (Java).— Dipping of the fleshed hides in arsenic solution.

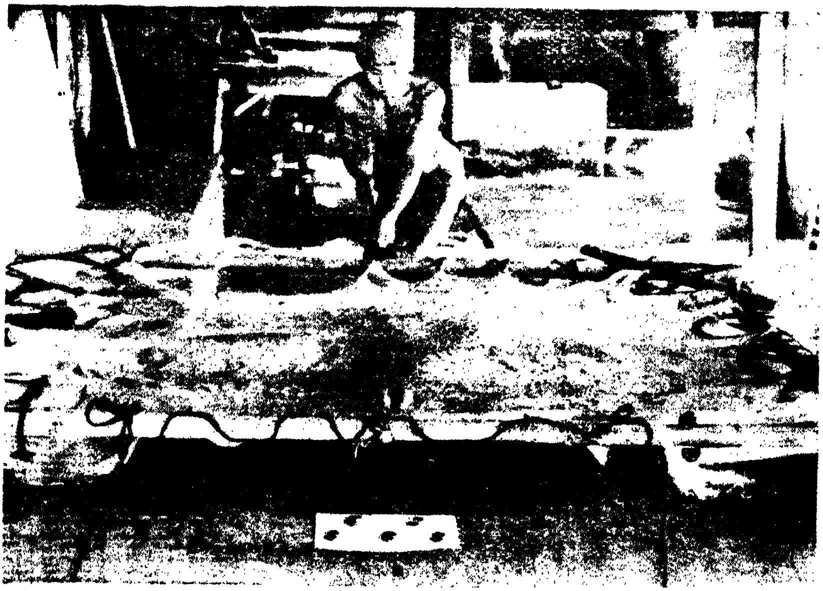


Plate V (Java).— Fixing and stretching of hides on the rectangular frames by means of a string and 'S' shaped hooks.

called "ticket-holders". The fish, after being brought to the yard, is weighed by the officer-in-charge who issues to the owner the quantity of salt necessary for curing that particular type and size of fish. The quantities of salt required per maund for different types and sizes of fish have been standardised and are laid down in the "instructions" to the yard officers. No minimum quantity is fixed and and a curer may obtain even 5 seers of salt, if need be. The salt has to be paid for in cash on spot and credit is never allowed. The quantity of fish brought, the salt issued and the money realised are entered in a register. The officer also keeps an account of stocks, receipts and issue of salt from day-to-day. As fish is a perishable commodity and as the landings may take place at any hour, the yards are kept open throughout day and night and the staff live on the spot. The curers are required to use the salt under the supervision of the yard officer. They can take away the fish only after the process of curing has sufficiently advanced, so that the salt cannot be recovered from the fish. This takes nearly 36 to 48 hours after its first application. The quantities of cured fish taken out are also weighed and recorded. The salt is issued at a standard rate of Rs. 1-4-0 per maund in all the yards. The actual price of salt at the works is only about 10 annas per maund, but all expenses incurred on the staff, supervision, transport, etc., at and to the yards are included in the sale price. The bazar price of duty-paid salt is usually Rs. 3-8-0 per maund. Great care and supervision are, therefore, necessary to see that curers or departmental staff do not abuse the privilege. The yards are said to be very popular and it is estimated that over 90 per cent of cured fish in the *Madras Province* is produced therein.

It would greatly facilitate all merchants and particularly the butchers and *chamars* who do business on a small scale if "Government Hide and Skin Curing Yards" on the above pattern could be established at certain suitable centres. They should be open to all and not restricted to "ticket-holders" only as in case of fish curing yards. Facilities should also be provided therein for storing and handling of hides during the period of curing and a charge for it may be included in the price of salt. The yards, which would be established for providing duty-free salt, might also result in centralising the hide and skin trade of a place, which would in turn facilitate proper supervision of curing and grading and improve their general marketing. In short, these yards might in course of time, grow into properly designed and controlled hide and skin markets.

(*d*) *Research on the curing properties of different types of salt available in the country.*—Salt cure is acknowledged to be the best process for curing hides. But before the trade can be advised to prepare more salt cured hides, it is necessary to study the curing properties of different salts available in the country. Some of them are no doubt peculiar to this country and little is known about them But even in countries where they are of a standard type, there is difference of opinion regarding the curing efficiency of the various constituents contained in the salt. For instance, according to some authorities, sodium chloride, even when pure, is not a perfect curing salt. Others suggest that a mixture of sodium carbonate and naphthalene when added to sodium chloride gives better results.* Others, again, claim that sodium sulphate, although an effective curing agent, does not possess the same preserving power as sodium chloride. Das, Dhavle and Pal (India), on the other hand, recommend that a mixture of 5 parts of anhydrous sodium sulphate and 1 part of sodium chloride is a superior curing agent to either of these salts used alone.† Recently the Salt Department have put denatured and coloured salt on the market exclusively for curing of hides and skins and have also under consideration the use of "bittern" salt for the same purpose.

No large scale experiments, however, have been made to study the merits of the various salts as curing agents and the Salt Department cannot advise the trade on these matters. Provision should, therefore, be made to fill up this important gap in the knowledge on curing of hides. Research work should, in the first instance, be carried out under laboratory conditions to act as a guide for experiments on a commercial scale so as to improve and extend the use of salt cure in various parts of the country.

The few leather chemists that are employed by some of the provincial governments are generally engaged on work relating to tanning materials and the processes of tanning. In other countries where the hide trade is of any importance, many studies have been made to improve the methods of curing to enable the departments concerned to guide the trade. It is rightly appreciated there, that good leather cannot be made if the hides are improperly cured. Greater attention should be paid to curing methods in this country also, so that the cheap labour and salt which are available can be fully exploited for the improvement of Indian hides, both for local tanning and export. The Tanners' Federation of India which represents practically all important factory tanners may be expected to assist in such studies and since a fair proportion of the hides produced in the country are exported, the various hides and skins shippers' associations as also the Association of Half-tanners, *Madras*, would no doubt co-operate.

(e) *Peripatetic demonstrations.*—As it is essential that the curing of hides should take place soon after flaying, the peripatetic flaying demonstrations, discussed in a previous section, should also attend to the introduction of correct methods of curing under village conditions. The demonstrations of "suspension" and dry-framed methods of curing sun-dried hides should form an integral part of the programme. Similarly, the showing of correct methods of applying salt, either for wet or dry cures, should also be attended to. The demonstrations of flaying and curing might very profitably be given at the *hats* or *shandys* where a large number of *chamars* assemble to dispose of their hides or purchase their requirements.

---

*Journal of Federation of Curriers, Light Leather Tanners and Dressers 1936, page 242.

†Journal of International Society of Leather Trades' Chemists, 1936, page 33.

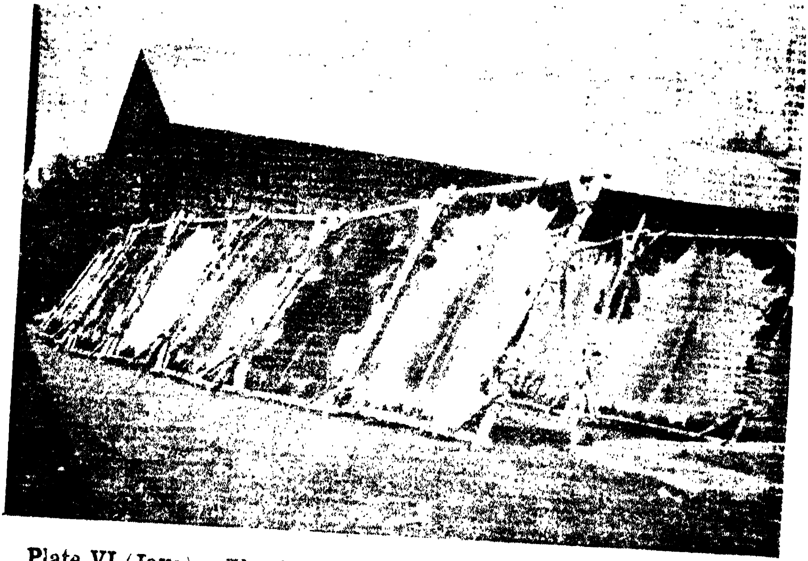


Plate VI (Java). The drying of framed hides in the sun in the early Stages. Note the inclined position of the frames to avoid direct rays of the sun from striking the hides.

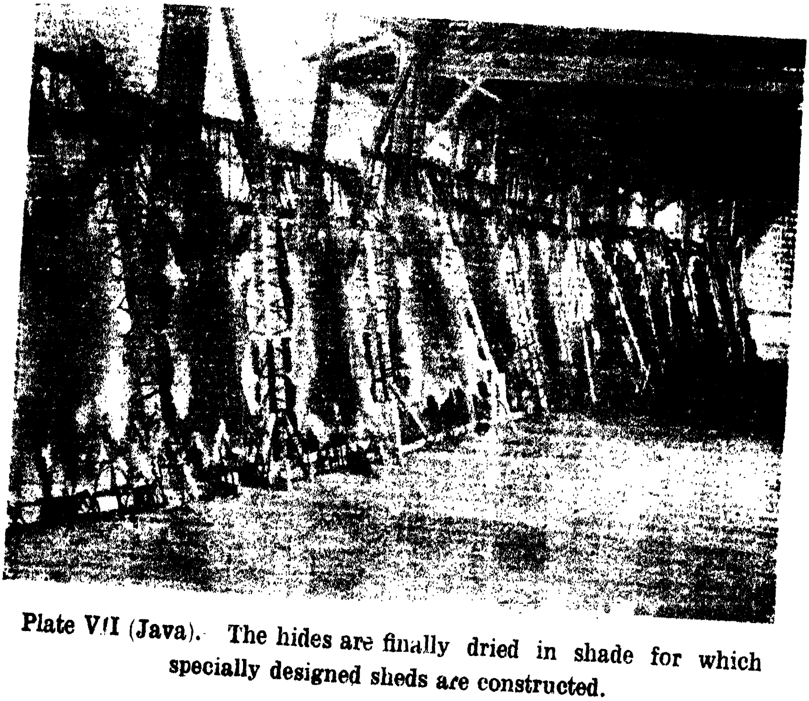
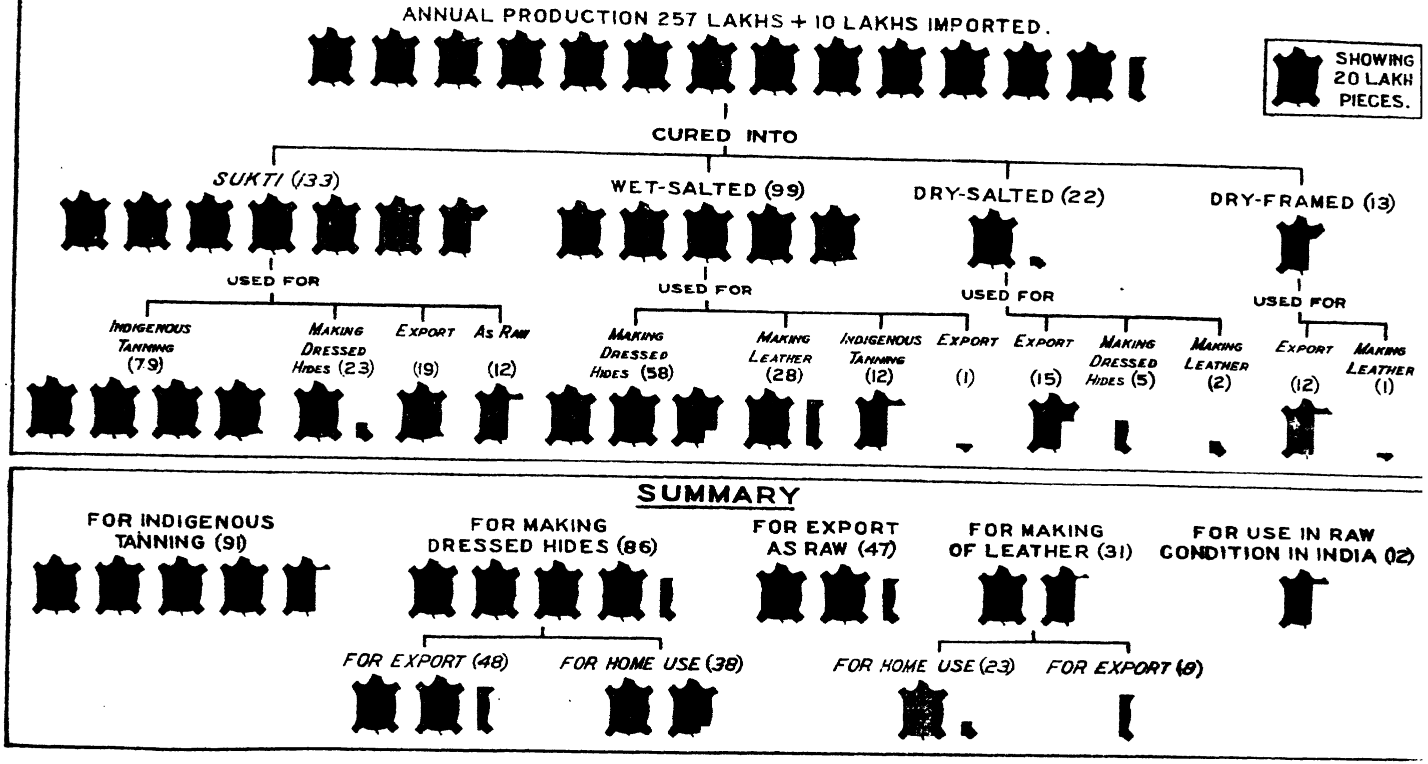


Plate VII (Java). The hides are finally dried in shade for which specially designed sheds are constructed.



PRODUCTION, CURE AND UTILIZATION OF HIDES.

(IN LAKHS)

(*f*) *"Loading" of hides and its control.*—This is an abuse of a cure and not a cure itself. In order to prevent "loading" of hides, the trade association should resolve against the purchase of *khari* cured hides on weight basis and instead induce their members to buy them on "per piece" basis or "per score" basis only, as was the case some years ago and is the practice even now in some markets. Propaganda work might also be undertaken to discourage the practice.

(5) ESTABLISHMENT OF CO-OPERATIVE SOCIETIES FOR EFFECTING THE IMPROVEMENTS.

With a view to expanding the production of salt cured hides, the provincial Co-operative Departments, in conjunction with the Salt Department, might consider the question of issuing denatured salt, through the medium of specially organised co-operative societies of the hide curers, that is, the village *chamars*. Apart from the issue of salt to the members, such societies could also act as sales organisations to others, on commission basis. Since denatured salt is duty-free, there would be a special scope for developing this activity without serious restrictions from the excise rules. It is reported that at times the owners of cattle pay the *chamars* a flaying fee and market the hides of their dead animals themselves.* In such cases, instead of the *chamars*, the owners of the cattle may be organised into flaying, curing, grading and hide markteing co-operative societies. These societies may also sell to others on commission basis denatured salt for curing purposes. The management of such societies can take charge of the animals on death, get them properly flayed, have the hides suitably cured with denatured salt and even attend to their marketing. At places where the indigenous tanning industry is developed, the *chamar* and other tanners may be organised co-operatively and these societies may obtain the cured hides from the former group. Further, if the making of country shoes is developed at a place, the village shoe-makers can also be suitably organized for the purchase of co-operatively cured and tanned hides and for sale or marketing of shoes made by them.

In order to manage efficiently the societies in each group and to justify the appointment of proper advisory and supervisory technical staff, the allied groups may require the establishment of a "Hide and leather industries co-operative union" to which the various societies may be affiliated. The union should market the improved hides through regulated hide markets envisaged in the chapter on "Reorganisation of Hide Marketing". They may also sell hides graded under the AGMARK direct to tanners and shippers. The Provincial and State Marketing Officers should help in the marketing of improved hides. In order to stimulate establishment of societies and unions it may be necessary in the early stages for the provincial and State governments to guarantee some bonus on all improved hides. When the movement has established itself and the producers are satisfied about its benefits the bonus scheme may be withdrawn. Establishment of such societies and their linking up with the terminal markets for profitable marketing besides directly helping the producers would also put hide improvement work on a satisfactory and sound footing.

---

*From a statement of Mr. E. L. Price, a representative of the Karachi Hide Shippers Association and a member of the Hide Cess Committee.

There seems to be considerable scope for improving and developing the different types of Indian cottage-industries on the above lines. The Co-operative and Industries Departments of the provinces, should, therefore, give this proposal their special attention and try it out in selected areas. Intensive work in compact areas is suggested with a view to achieve striking results which are essential for arousing spontaneous and popular support for any scheme designed to bring about a change in the existing methods.

INTER-CHAPTER TWO.

Preparation for market really commences with the flaying operation, that is, taking the hide off the dead or slaughtered animal. In many other countries, mechanical flaying machines, wooden hammers, etc., are employed in the operation. In India, the flayers use knives only. This unduly exposes the hide to cuts and "flay marks" and requires that the operation be performed with great skill and patience. Haste on the part of flayers (since payments are generally made on piece basis), the employment of inexperienced flayers, sometimes even boys, the absence of hoisting arrangements, ill-lit slaughterhouses, etc., are responsible for causing the trade an annual loss of about Rs. 70 lakhs by way of depreciation in value of otherwise good hides. Amongst the slaughterhouses from where data were collected, it was observed that the percentage of damaged hides through defective flaying was particularly heavy at *Bandra* (*Bombay*) slaughterhouse, being 32 per cent against 24 at *Garden Reach* (*Calcutta*), 20 at *Tangra* (*Calcutta*), 15 at *Agra*, and 13 per cent at *Delhi*. In the case of fallen hides, besides the occasional knife marks the major defect is that the *chamars* generally leave too much flesh and tissues adhering to the pelt, which render preservation ineffective and the hide "gives away" in patches during the liming process at the tannery.

Both in other countries and in India, apart from improving the conditions of work and adoption of other preventive measures, the payment of suitable premium to the flayers for properly flayed hides has proved effective in reducing the numbers of the flay cuts.

After flaying, the next step in the preparation for the market is the curing of hides. Unless a hide is properly preserved, decay sets in, within an hour or two after the death or upon slaughter. Only a negligible number of hides can be put to tannage soon after flaying and almost all of them have to undergo handling several times, have to be transported to distant markets (sometimes overseas), and have to remain in storage, before they ultimately reach the tanners. Thus, they all have to be cured and the process comprises the most important item in the preparation for the market.

The types of cure adopted are (*i*) wet-salting, (*ii*) dry-salting, (*iii*) dry-framing, and (*iv*) air-drying in unframed condition. Tanners prefer the first type of cure as it leaves the hide pliable and moist, a condition most suited to easy and effective tannage. Exporters prefer the remaining three types, for convenience of handling, packing and transport.

It is estimated that before the present war, about 5 per cent of Indian hides were prepared as "dry-framed", about 8 per cent as "dry-salted", about 38 per cent as "wet-salted" and the remaining 49 per cent just dried in the sun or shade in an unwashed and unframed condition. These goods are called *suktis* and consist mostly of fallen hides handled by the *chamars*.

Subject to certain conditions, the salt for curing can be had duty-free from the Government Salt Department. In North India, generally *Sambhar* (lake) and *Lahori* (rock) salts are used. They consist mostly of sodium chloride with no impurities. But in parts of the *United Provinces*, *Bengal*, *Bihar* and *Assam* *khari* salt is used extensively. This is mostly a mixture of sodium and magnesium sulphates. For dry salt curing the *khari* salt is considered to be the best medium in the humid regions of *Bihar* and *Bengal* but the hides are unnecessarily (often wilfully) loaded with it to increase their weight. Even in the actual use of the salt itself, there does not seem to be any consistency and an investigation in the *Punjab* showed that anything from 6 to over 17½ lb. of salt may be used for curing a slaughtered kip.

CHAPTER III.—UTILISATION AND DEMAND.

Hides and skins are the basic raw materials needed by the tanners for making leather—a commodity of universal use both in times of peace and war. Their utilisation in raw condition, that is, without tanning, is very small. In recent years, the uses of leather have been so great and varied that in some countries special steps had to be taken to meet the extra demand. For example, in Germany new resources had to be tapped for the production of light leathers from skins of marine origin and these have received special encouragement.* Artificial leather and leather substitutes are also being used in increasing quantities in most countries. The artificial leathers generally consist of certain textiles coated with some resinous substance and are suitably painted and grained to represent the finish of real leather. Some of the substitutes consist of hard wearing fibre or paste-boards, which are also finished to look like genuine leather and are used for making of trunks, bags, suit cases, etc. Cheaper canvas and rubber shoes are also used by some, in place of leather foot-wear. The substitutes are, however, not much used in India and at any rate, they have to be imported as their manufacture is not yet fully developed. But for several special purposes, genuine leather has always held its own in almost all countries of the world including India.

A.—Utilisation of leather for articles of common usage.

The hides and leather (including the number of pieces imported) that are available for use in India amount annually to 175 lakh pieces (see page 50). Except for about 12 lakh hides that are used in raw condition, without any tanning, all hides are tanned by different methods, before they are utilised by the manufacturers, large or small. In this section, it is proposed to discuss briefly the main types of leather articles made in India as this helps to study some of the problems connected with the hide and tanning industries.

In the majority of Indian homes, the only articles of leather are generally one or two pairs of country pattern shoes. In countries abroad, on the other hand, people use regularly a variety of leather goods such as boots, shoes, suit cases, bags, gloves, leather upholstery and even leather clothes. Industrially developed countries find many uses for leather, *e.g.*, motor car manufacturing countries require large quantities of leather for upholstery and in the agricultural operations, heavy leather harness is required for the horses. But in India for a plough or cart drawn by bullocks, only a pair of leather yoke-straps may be used and, at times, even these may be substituted with pieces of rope.

In the absence of statistics and as the manufacture of leather articles is generally carried out on a small and scattered scale, there has been some difficulty in arriving at quantities of leather used for different purposes. During the survey a few estimates were, however, made in the *North-West Frontier Province*, the *Punjab, Delhi Province*, the *United Provinces*, the *Central Provinces* and the *Madras Province*. Based on them, the number of pieces of leather utilised for different purposes for the whole country have been estimated and are given in the table below. As indicated in the beginning of this section, the total of 175 lakh pieces represents the net available hides (raw and tanned) in India.

---

* Foreign Commerce Weekly, 5th October 1940

Leather (tanned from hides only) required annually for different types of articles used in India.*

Articles.	Number of pieces used annually.	Percentage to total.
	(lakhs).	
1. Country pattern shoes including *chappals* (sandals)	87·5	50
2. Western style shoes	21·0	12
3. *Mote, charas* or *kose* for drawing water from wells ..	30·0	17
4. Leather ropes, straps and other articles of agricultural or industrial use.	28·0	16
5. Suit cases, harness and saddlery and leather for repairs, etc.	8·5	5
Total ..	175·0	(100)

It is seen that half of the net available supply of leather is used for making of shoes of country pattern. This is natural, because a large proportion of the population live in the villages, and those amongst them who wear any shoes at all, go in for shoes of country pattern. Such foot-wear is of many diverse patterns in the various parts of the country and no attempt is made to describe them in detail. It may be assumed that 8 pairs of country shoes can be made from the leather of one hide. 87½ lakh pieces of leather would, therefore, make about 700 lakh pairs of shoes. This would provide only one pair per annum, for every 5 persons in the rural areas and seems to be a fair estimate as many people do not possess shoes. A pair may last for more than a year through casual use and repairs.

*Leather made from skins is also used for making of shoes, either wholly or along with leather from hides, but here it has not been taken into account.

Assuming the above outturn per hide for shoes of western style also, which include ladies' and children's shoes, the 21 lakh pieces of leather would produce approximately 168 lakh pairs per annum. The shoes of western style are mostly used by the town people whose population may be taken as 4 crores. The 168 lakh pairs would, therefore, provide 2 pairs per annum for about 5 persons. Incidentally, it might be mentioned that in 1937-38, India imported about 12 lakh pairs of boots and shoes, out of which about half were of leather and the rest made of canvas, rubber or leather uppers with leather or rubber soles. The imported leather shoes are almost exclusively used by the town people.

The use of leather *charas* or *kose* or large buckets for lifting water from wells, for agricultural purposes, is common in many areas where well irrigation is practised. In the *Bombay Province*, the majority of the wells have this system of water lifting. In the *Punjab*, this is not so common and many of the wells are fitted with the device called the "Persian wheel" in which practically no use of leather is made. In southern and eastern parts of India again, animal power is not much used for lifting water from wells but men are employed to do the job with the help of metal or wooden devices. In the year 1936-37, 15 million acres were reported to be irrigated by wells. This was about a quarter of the total area irrigated in India during that year.* The number of wells in India is not available but assuming that 4·5 acres† are irrigated per well, for irrigating 15 million acres, there should be approximately 33 lakh wells in the country. Assuming again that about 15 lakhs of these only use the leather buckets, that a well has two sets of these and that it takes two hides to make a bucket, which lasts for about two years, approximately 30 lakh hides would be needed each year, for satisfying this demand.

For the making of ropes, straps and other articles of agricultural or industrial use, approximately 28 lakh pieces are required annually. Of these, 12 lakh pieces are used as raw. For making of suit cases, bags and other travel goods, saddlery of western and country pattern and for the general repairs of all articles of leather used in the country, approximately 8·5 lakh pieces or about 5 per cent of the net available supply is required.

B.—Demand from different industries.

(1) GENERAL.

The demand may broadly be classified into the quantity required for internal use and that required by the shippers for the markets abroad. It has already been indicated in the chapter on "Supply" that about 40 per cent of the hides produced in India are exported to other countries, in raw condition and after tanning. The remaining 60 per cent are required by small and large tanners for preparing leather, suitable for the different types of articles used in the country.

The following table shows the estimated annual demand for hides from the different groups of Indian industries and the shippers.

---

*Agricultural Statistics of India, 1936-37.

†Average for the *Punjab*, the *United Provinces*, *Madras*, *Bombay* and the *Central Provinces* as reported in the Report of Indian Irrigation Commission.

Demand for hides.

Industry or trade.	Number. (lakhs).	Percentage.
1. Village tanners for indigenous tanning	91	34·1
2. Village and larger tanneries for making dressed hides (86 lakhs)—		
(*a*) for export	48	18·0
(*b*) for use in India	38	14·2
3. Shippers for export to foreign countries, as raw ..	47	17·6
4. Modern tanneries for making fully finished leather (31 lakhs)—		
(*a*) for use in India	23	8·6
(*b*) for export	8	3·0
5. Village artisans for making ropes, etc., from hides in raw condition without any tanning.	12	4·5
Total (257 lakhs of Indian production + 10 lakhs imports).	267	(100)

A diagrammatic illustration showing production, cure and utilisation of hides is given on plate facing page 85 and is self-explanatory. However, the position of exports and consequently the share available for use by other industries changes from year to year. The particulars in the diagram represent generally the average condition of the trade for 5 years prior to 1938-39.

(2) For indigenous tanning.

Ninety-one lakh pieces or about 34 per cent of the Indian production of hides, including imports are required by the village tanners (generally *chamars* and *raighars*) for tanning by the indigenous methods. This type of tanning is found all over the country, although in certain districts it may be relatively insignificant. Several methods are adopted by the village tanners but on the whole the process is very crude and the material could hardly be termed "leather". The tanning itself is done on a cottage industry scale by handling 2 or 3 hides at a time. This could not be otherwise, as the *chamars* are generally not in a position to invest even a small amount of capital for bigger business. Whatever tanning materials, mainly barks of various shrubs and trees, may be available in the locality are used, and it could be safely said that no attempt is made to improve the quality of so-called leather produced in this way. It is not given any finish or colour and has an unpleasant smell, which becomes more so during the rainy season. It is generally used for the making of country shoes, leather buckets for lifting water from wells and other goods where fineness and finish are of little importance.

To meet this demand it is estimated that something like 79 lakh *sukti* hides, mostly fallen, are used. The remaining 12 lakhs only may be cured by the dry or wet-salted method. These are also of fallen type except for a few slaughtered rejected hides. The *chamars* usually retain poorer hides with warbles, tick marks, brand marks and other defects due to old age and emaciated condition of the animals before death and tan them for their own requirements, while they sell away the better types of fallen hides, in raw state, to the *beoparis*. This cottage industry, therefore, consumes most of the inferior quality hides produced in India. To that extent, it is of great economic importance and needs greater attention than that given to it hitherto.

(3) FOR MAKING DRESSED HIDES (KNOWN AS "HALF-TANNED").

It is estimated that about 86 lakh pieces are required for making dressed hides. These are also tanned with barks and tanning extracts of vegetable origin. But the tanning is much superior to ordinary village tanning and the material produced is soft and pliable with no offensive smell. It is also of a lighter colour, compared with the crudely tanned hides produced by the method described in the previous section. Dressed hides are left unfinished and uncoloured. The production is done without the help of machinery, etc., but a large number of hides are handled by each tanning unit. This industry is mainly concentrated in the *Madras Province, Hyderabad* and *Mysore States* and also to some extent in the *Bombay Province*. In other areas, it is of little importance.

Out of 86 lakh pieces of tanned or dressed hides produced annually it is estimated that about 38 lakhs are retained in the country for internal use and 48 lakhs are sent to markets abroad, mainly to the United Kingdom. What remains in India is used for making the better types of country pattern shoes and for the in-soles, etc., of western pattern shoes. Harness, saddlery and travel goods are also made from dressed hides and for use in India are not given much of finishing. The United Kingdom has made special progress in finishing of leathers, for which the Indian dressed hides are found admirably suitable. The tanned or dressed hides are liked by curriers in England not only for their light tannage but also because this tannage can be easily "stripped" and the stripped leather can subsequently be retanned by the curriers, according to their requirements. Mostly kips are required for this industry.

Before 1914 the bark of *Cassia auriculata* or *avaram* was used for tanning of dressed hides. This bark is still considered to be the best material for a light tannage. The demand for dressed hides, for export to the United Kingdom, however, went up considerably during the War of 1914--18 and supplies of *avaram* bark were not enough in India. Wattle bark from South Africa had, therefore, to be used along with *avaram* bark. This was found to be so good a substitute that its use has been maintained and at present a greater proportion of dressed hides for export are tanned by wattle bark alone. The dressed hides produced through this tanning are particularly soft, mellow and light coloured and are adaptable for better processing by curriers and dressers, with very good results. In tanning with both types of barks, myrobalans are also used.

(4) For export trade (raw).

Forty-seven lakh pieces of raw hides used to be exported annually during recent years before the commencement of the War in 1939. The destinations have already been discussed in the chapter on "Supply". The estimates of the types and classes of hides exported are given in the table below :—

Types and classes of hides exported from India.

Types of cure.	Number (lakhs).	Proportion to total.	Type of hide.			
			Number (lakhs).		Percentages.	
			Fallen.	Slaughtered.	Fallen.	Slaughtered.
Sukti ..	19	40·4	19·0	*Neg.*	100	*Neg.*
Dry-salted ..	15	31·9	9·9	5·1	66	34
Framed ..	12	25·6	9·0	3·0	75	25
Wet-salted ..	1	2·1	0·5	0·5	50	50
Total ..	47	(100)	38·4	8·6	81·7	18·3

The above indicates that approximately a fifth of the exports consist of slaughtered hides. The proportion drawn from the urban or city slaughterhouses and from the rural areas is, however, not known. But the observation is of some importance as it points to the need for a greater co-ordinated effort on the part of both the shippers and tanners for the improvement of the quality of slaughtered and fallen hides in which they are both interested.

(5) For making finished leather.

Thirty-one lakh pieces of hides are fully tanned and finished into leather annually in India. The leather obtained is of a quality suitable for making boots and shoes of western pattern, suit cases, bags, etc., where fineness and finish are important. Out of these, 23 lakh pieces or nearly 75 per cent of the production of leather is exported and only about 8 lakhs are used internally. This manufacture may be treated under two groups, (*a*) chrome leather and (*b*) vegetable-tanned leather.

(*a*) *Chrome leather.*—Approximately 21 lakh hides (mostly kips and calves) are chrome tanned annually. This is a chemical tannage, the main constituent being sodium or potassium dichromate. In the market there are several ready-made patented chemical tanning compounds which have simplified the chrome process considerably. Most of the tanners, however, prefer to make their own chrome liquor by direct reduction of dichromate with sugar, glucose or other carbohydrates in the presence of sulphuric acid. The main advantage of this process over vegetable tanning is the rapidity with which a raw hide can be converted into leather. It usually takes less than a month for the leather to be completely tanned and finished. The process, however, requires a much closer control and greater technical skill than vegetable tanning.

The tanneries adopting chrome tanning, although large individually, are not more than a dozen in India. At *Calcutta*, however, several Chinese tanners produce chrome leather on a cottage industry scale and it is estimated that for this they require about 3 lakh hides per annum. They generally produce an inferior type of leather and consequently require cheaper hides of low selection, caring more for cutting space than quality in the chrome leather.

(*b*) *Vegetable-tanned leather*.—Approximately 10 lakh hides per annum are vegetable-tanned and finished. A major portion of these are buff hides prepared for outer and inner soles of boots and shoes and the better class of saddlery, etc.

Here the process is slow. For the raw hides to be tanned and finished into leather, it may, at times, take even 6 months, depending upon the quality of leather aimed at. *Babul* bark, wattle bark, and myrobalans are generally used for tanning. Here also large tanneries which can tan and finish the leathers satisfactorily are very few in number. The Central Government Harness and Saddlery Factory, for example, falls under this group of tanneries. It finishes a very high class vegetable-tanned leather for the requirements of the Army, particularly in the harness and saddlery line. Specially superior and heavy quality buff hides and kips are required for its use.

(6) FOR USE AS RAW.

The demand for hides to be utilised in the raw condition, without any tanning, is limited to only about 12 lakh pieces or less than 5 per cent of the annual production. Out of these, straps, ropes and other articles of agricultural use are made. It is obvious that inferior and cheaper types of hides are required for this purpose. For mounting of drums and other musical instruments, however, raw cow or calf hides of good quality are generally in demand.

C.—Provincial requirements and utilisation.

In the preceding sections the utilisation and demand for hides have been treated on an all-India basis as determined on the estimates provided in each area of survey. But, for want of complete information on the subject, it has not been possible to indicate the share of each province or major State in the total Indian imports or exports. Accordingly, only the total estimated quantities brought in or sent out of each of the province are given in the following table. Collectively they cover the imports and exports of the country as a whole. The figures should, therefore, be read in that light and are only approximations. It will also be seen that the figures are treated under seventeen " trade blocks ". This procedure is followed as the statements of inter-provincial and inter-State movements are recorded in that way. The movement by road has been estimated for the corresponding areas and has been added to the recorded figures.

Utilisation of raw hides in the various trade blocks.

(In lakhs).

Trade block.	Annual production of hides.	Total trade including quantities received or sent out by sea and land frontier routes.		Net available number (raw hides).	Required for —		
		Imports.	Exports.		Indigenous half-tanning.*	Making of dressed hides.	Making of finished leather.
Kashmir	2·3	0·2	0·4	2·1	2·1	*Nil*	*Nil.*
North-West Frontier Province ..	4·2	2·9	6·6	0·5	0·5	*Nil*	*Nil*
Sind and Baluchistan	3·6	8·6	10·2	2·0	1·7	0·3	*Nil*
Punjab	14·7	3·4	5·6	12·5	11·7	*Nil*	0·8
Delhi	0·3	0·9	0·8	0·4	0·4	*Nil*	*Nil*
Rajputana	8·5	*Neg.*	2·2	6·3	6·3	*Nil*	*Nil*
Central India ..	5·0	*Neg.*	2·2	2·8	2·8	*Nil*	*Nil*
Bombay Province ..	15·7	1·4	3·7	13·4	10·1	2·0	1·3
Mysore State ..	4·2	7·3	0·1	11·4	4·0	6·8	0·6
Madras Province ..	56·7	38·0	1·4	93·3	13·3	71·0	9·0
Hyderabad State ..	15·4	1·5	0·6	16·3	10·3	6·0	*Nil*
Central Provinces ..	21·9	4·3	5·0	21·2	21·2	*Nil*	*Nil*
United Provinces ..	21·6	2·3	6·3	17·6	5·3	*Nil*	12·3
Bihar	21·7	1·3	20·9	2·1	2·1	*Nil*	*Nil*
Orissa	11·0	*Neg.*	9·3	1·7	1·7	*Nil*	*Nil*
Bengal	45·5	6·2	35·7	16·0	9·4	*Nil*	6·6
Assam	4·9	0·1	5·0	*Neg.*	*Neg.*	*Nil*	*Nil*
Total India ..	257·2	78·4	116·0	219·6	102·9	86·1	30·6

It is seen that everywhere, except in the areas where the tanning of dressed hides and finishing of leather are developed, all the hides are tanned by the indigenous method. Even at the finishing centres, some hides are tanned as described above. The demand for the making of dressed hides is the largest in the *Madras Province*, for which 38 lakh hides are imported from other provinces. But of the 71 lakh dressed hides that are tanned there, many are exported abroad and to other provinces in India. The making of finished leather is most developed in the *United Provinces*, mainly at *Cawnpore* and *Agra* and out of the total of 30 lakh pieces of leather produced in India, as much as 12 lakh pieces and more are handled in the *United Provinces*. A part of these is sent to other provinces and abroad, but the quantities could not be determined separately.

*Including 12 lakh hides used raw.

D.—Trend of utilisation and demand.

Practically no information is available to enable definite observations to be made regarding the year to year increase or decrease in the demand for raw hides by the various industries. The available figures relate to the export trade under three heads, *i.e.*, raw hides, dressed or tanned hides and unwrought leather. To some extent, therefore, these might be taken to show roughly the trend of conditions in the past. The quinquennial figures for 30 years ending with 1938-39 have already been given in a table on page 28, in the chapter on "Supply". A review of that table would show that, on the whole, the export trade has declined from approximately 143 lakh pieces prior to the War of 1914 to about 111 lakh pieces per annum for the quinquennium ending 1938-39. The decline is mainly in raw hides for export. It is noticed, however, that the exports of tanned hides and of unwrought leather made in India, have considerably increased. This shows that the trend of the export demand for hides from the Indian tanning industry has been on the increase. To some extent, the Ottawa Trade Agreement concluded in 1932 is responsible for this, since it provides Indian tanned or finished goods with a preference on import duty into the United Kingdom, against similar goods coming from non-Empire countries. For instance, a tannery in *Cawnpore* handled only 1·4 lakh kips for tanning into chrome leather, mainly for export, in 1931, but it handled, in 1934, as many as 4 lakh pieces. Apart from the increased demand of tanned and finished goods for export, the use in India of better made and better looking shoes, both of the country and western patterns, is also becoming more extensive than before. Thus the demand for better tanned and finished leathers is increasing.

This is substantiated by the increased import of tanning material as shown in the table below :—

Imports of tanning material into India.

(In lakhs).

Quinquennium ending.	Tanning bark (wattle).		Cutch, gambier, etc.		Total.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
	Cwt.	Rs.	Cwt.	Rs.	Cwt.	Rs.
1918-19 ..	..	..	0·36	9·13	0·36	9·13
1923-24 ..	0·24	1·18	0·37	10·36	0·61	11·54
1928-29 ..	1·41	12·11	0·37	9·89	1·78	22·00
1933-34 ..	2·28	14·30	0·38	7·22	2·66	21·52
1938-39 ..	3·34	17·94	0·55	7·86	3·89	25·80

The wattle bark is obtained mainly from South Africa. Cutch, gambier, etc., are tanning extracts obtained largely from Burma and the Straits Settlements.

The foregoing observations point to the fact that the Indian tanning industry is gradually developing, both for meeting the increased consumption of tanned hides and leather for internal use, and for exports of tanned goods to other countries. Three factors, however, appear to be essential for maintaining a steady progress and improving the efficiency of the industry as a whole. Firstly, the tanneries should be able to buy in open markets larger quantities of the basic raw material, namely, hides and skins, according to pre-determined specifications—the reliability of which should be guaranteed to enable them to quote forward deliveries on the basis of grades. A tannery recently re-opened in the South, has still considerable difficulty in obtaining hides of correct specification and this drawback is continuously felt even by the oldest tanners and exporters. The second essential is to make available cheaper tanning materials to the trade, either by growing and manufacturing them in suitable tracts in India, or by developing alternative tanning processes which can produce leather of equally good quality, from materials already available in the country. Here also the importance of grading and standardisation of the materials on the basis of percentage of tannings, etc., should be emphasised. The third factor is that the leather goods manufacturing industry should also be developed *pari passu*, to provide for the tanners a ready market for leather in India itself. The outbreak of war in 1939 opened up a new field in this line and Indian manufacturers were commissioned to supply army boots and other leather goods, even to countries outside India. With the country's enormous hide supply and a progressive tanning industry provided with cheap (though untrained) labour, India should be able to develop an important boots, shoes and leather goods industry for local use and for export at least to the countries in the Pacific.

E.—Note on seasonal variations in demand.

In the absence of other data, the monthly variations in demand can best be studied from the published figures of the weekly arrivals of raw hides, by rail and river, at certain important inland places and the ports. These are compiled on a monthly basis and reproduced in the table below :—

*Monthly arrivals of raw hides by rail and river at certain important assembling centres**.

(Average for the years 1938 and 1939).

—	Maunds.	Percentage to annual total.
January	1,76,233	10·9
February	1,62,087	10·1
March	1,47,224	9·1
April	1,42,186	8·8
May	82,405	5·1
June	82,347	5·1
July	1,06,919	6·6
August	90,313	5·6
September	1,21,153	7·5
October	1,39,422	8·7
November	1,53,827	9·6
December	2,06,955	12·9
Total	16,11,071	(100)

**Agra, Amritsar, Bangalore, Bombay, Calcutta, Cawnpore, Dacca, Delhi, Karachi, Lahore* and *Madras.*

It is observed that the maximum movement or demand for hides takes place during the winter months, *i.e.*, October to April. The three months of December, January and February have the heaviest rush and the demand during these months is almost double of that of during the summer months. The traffic by road is extra, but as it is not recorded, the monthly maundage is not included.

F.—Note on utilisation of by-products.

In other countries considerable strides have been made in conserving and utilising all the by-products of the hide and tanning industry. In India, on the other hand, little attention has been paid to this aspect in the past. As far as is known, only at *Cawnpore* there is a small industry for making of glue from the trimmings of hides obtained from the tanneries. But the glue obtained is crude and sold (before September 1930) at half the price compared with glue obtained from Belgium and Sweden. Edible gelatine too, is not yet manufactured although the process is quite simple.

The Industrial Research Bureau and the provincial Industries Departments should, therefore, undertake to work on these lines and develop the manufacture, standardisation and marketing of the various by-products, with a view to preventing the wastage which takes place at present.

G.—Note on utilisation of and demand for hides in Burma.

On page 51 it is indicated that the Burmese production *plus* imports of raw and dressed hides and of unwrought leather, amount to approximately 10·23 lakh pieces per annum. Out of these, as many as 8·46 lakh pieces are required by the shippers and are exported to other countries, including India. The net available supply for use in Burma thus amounts to only 1·77 lakh pieces per annum.

There are no modern tanneries in Burma and most of the hides are tanned by village tanners. These are *chamars* and *mochis* who have migrated from India. But, contrary to the general practice in India, they do not obtain the hides free from the owners of cattle. They have to get these from the primary assembling merchants who purchase the fallen hides from the owners of the cattle and the slaughtered hides from the butchers. It is estimated that nearly 30,000 buff hides, or approximately 11 per cent of the net available supply in Burma, are used for making *peindan* slippers and about 1,000 cow hides are required annually in raw condition for mounting musical instruments. As far as is known, no hides are tanned by the chrome process in Burma.

INTER-CHAPTER THREE.

Before the present war, approximately 40 per cent of the Indian hides were exported as raw or after tanning. The remaining 60 per cent were taken by small and large tanners for preparing leather suitable for different types of articles used in the country. The 257 lakh Indian hides *plus* the 10 lakh imported hides are disbursed annually as follows :—

Demand for hides.

Industry or trade.	Number. (lakhs).	Percentage.
1. Village tanners for indigenous tanning ..	91	34·1
2. Village and larger tanneries for making dressed hides (86 lakhs) —		
(*a*) for export..	48	18·0
(*b*) for use in India	38	14·2
3. Shippers for export to foreign countries, as raw	47	17·6
4. Modern tanneries for making fully finished leather (31 lakhs)—		
(*a*) for use in India	23	8·6
(*b*) for export	8	3·0
5. Village artisans for making ropes, etc., from hides without any tanning	12	4·5
Total (257 lakhs of Indian production+10 lakhs of imports).	267	(100)

The indigenous tanning is done by the pit or bag methods, mostly by *chamars* and *raighars,* on a cottage industry scale by handling 2 or 3 *sukti* hides at a time. The bark tanned leather thus produced is poor in finish and has an unpleasant smell and can be used only for country shoes, buckets for lifting water, etc.

The preparation of half-tanned hides, both for export and home use, is a speciality of the South, particularly of the *Madras Province*. For this reason, the tanners who prepare them are called *Madrasi* tanners. Mostly kips are required for this industry and the bulk of the production is exported to the United Kingdom, where it is retanned and finished as good quality bark tanned general purpose leather. The modern and large scale tanneries in India require both kips and buff hides, for chrome and bark tanning respectively. They produce high class leather, comparable in quality with imported leather. The industry is most developed at *Cawnpore*, *Calcutta* and *Madras*.

The Ottawa Trade Agreement, concluded in 1932, gave an impetus to the Indian tanning industry, for exporting half-tanned and finished leather to the United Kingdom. The trend of development can also be judged by the increased quantity of tanning materials imported into India, mostly from South Africa and Straits Settlements. In the quinquennium ending 1918-19 their value was approximately Rs. 9 lakhs whereas the average for the five years ending 1938-39 was nearly Rs. 26 lakhs.

Excluding the hides that are exported (raw or tanned) and including the small quantity of imported leather, normally about 175 lakh hides are available annually for India's own requirements. Out of this, only about 12 lakh hides are used in raw condition, without any tanning. The rest, as explained above, are tanned by various methods and by several types of tanners. The methods of tanning depend to a great extent upon the uses to which the leather is put to in the country. Inquiries show that about half of the Indian tanned leather is utilised for making country shoes and *chappals.* This quantity is estimated to produce about 700 lakh pairs of shoes, or one pair per annum for every 5 persons in rural areas. Large and small buckets for lifting water from wells, etc., are also made out of village tanned hides and these require about 17 per cent of the indigenous tanned leather. Almost an equal proportion is used for making other articles of agricultural use, such as leather ropes, straps, lacings, etc. Only 12 per cent of the leather (mostly tanned by modern tanneries) is used for making shoes of western style. The remainder or only about 5 per cent is utilised for making suit cases, harness, saddlery and for providing leather for repairs. These proportions refer to conditions before the present war and do not take into account the extraordinarily large number of army boots and other leather gear, made against war orders.

Burma.—Burma does not possess any modern tannery and most of the 1·7 lakh hides tanned in that country are prepared by the village tanners, mostly *chamars* who have migrated from India. As far as is known, no hides are tanned in Burma by the chrome process.

CHAPTER IV.—PRICES.

From the tanners' and shippers' point of view the correct quotation and maintenance of prices are of great importance. From the producers' point of view also, the realisation of the appropriate price is of no less importance. In the case of a slaughtered hide it is observed that although its value forms but a part of the cost of animal, the general trend of hide prices has a considerable bearing on the sale price of the animal itself. In the case of fallen hides, apart from the fact that the pelt represents almost the entire recoverable cash value of the carcass, the care and attention which the *chamars* usually pay in the flaying or preparation of the hide, depends greatly upon the price they are likely to realise. Unfortunately, however, a comprehensive discussion on this important subject is rendered rather difficult by complexities due to variations in quality, type, size, weight, cure, seasons, district of origin, influence of overseas markets, etc., all of which have a bearing on prices. Besides, in the early stages the trade is in the hands of persons who do not correctly maintain intelligible price records. The absence of published data on prices, even at the later stages in the trade, further adds to the difficulties of giving a fuller description of the subject. There being no statutory grades in the hide trade, the comparison of prices between different markets is also not practicable and whatever data are available cannot thus be fully utilised. In this chapter attempts have been made to review the matter as fully as possible, but the figures given should be taken to be applicable to average qualities and market conditions only.

A.—Unit of sale and basis of price quotation.

(1) AT PRELIMINARY STAGES.

The element of cure, type (kip, buff hide or calf skin) or grade generally does not affect the basis of quotation during the early stages of hide marketing and a flat price per piece or a rounded price for the lot may be offered when the hides are sold or purchased. For instance, when *chamars* or butchers sell fallen or slaughtered hides respectively, they invariably get a flat price per piece or a price for the lot and no distinction is made between kips and buff hides or calf skins. Similarly, no consideration may be shown to the quality or weight of the individual pieces. The above position holds good for almost the whole country in the early stages of the hide trade.

(2) AT ASSEMBLING MARKETS.

During the later stages of hide marketing, however, *viz.*, at the assembling markets, certain conventions are observed in fixing the units of sale and basis of price quotations. But these vary from tract to tract, market to market and, at times, between merchants in the same market. Sometimes, when a certain system of quotation has been in vogue for a length of time, it is changed only according to the market requirement. For instance, prior to 1938, in *Cawnpore* market, wet-salted kips were quoted on the basis of pounds per rupee, but since then they are being sold on the score basis. Certain weight limits are, however, prescribed for a pack of 20 hides. The table below shows the units of sale and basis of price quotations according to types and cures at the important assembling markets in some of the provinces and States.

Basis of price quotations at the important assembling markets.

Area.	*Sukti*, dry-framed and dry-salted.	Wet-salted.
N.-W.F.P. and Punjab	per md.	..
Delhi Province	per md.	lb. per rupee. *
Sind	per md. (of 28 lb.)	..
Bombay Province ..	per md. (of 40 lb.)	As. per lb.
Mysore State	per md.	As. per lb.
Madras Province	per hide † ..	As. per lb.
Hyderabad State	per 100 pieces ..	per 100 hides.
United Provinces	per md.	lb. per rupee.*
Bihar	per hide and per md.	lb. per rupee and Rs. per 20 lb.
Bengal	per 20 lb. ..	per lb.*
Assam	per hide	..
Burma	per 100 viss ..	per 100 viss.

The information given in the table above is more or less self-explanatory. It shows that in the quotation of prices, the trade does not follow a common method—not even for a particular type of cure. For instance, in some areas the wet-salted goods are quoted per piece or per score, but in *Bengal* the price is quoted in rupees per 20 lb. In *Hyderabad State* the quotation is per 100 hides. These diversities are certainly not helpful and it would be better if the basis of quotation was standardised.

As the outturn of leather is proportional to the hide substance present in a pelt, in most of the other countries hides are quoted and sold on the basis of weight. In doing so, however, the origin of the hide, type of cure, the quality of the hide and the weight range of an individual piece are taken into account. For instance, in Great Britain the quotation " pence per lb." is based on (*a*) first or second class, (*b*) clear or warbled, (*c*) Manchester ox or cow and (*d*) for weight groups ranging from 70/79 lb., 60/69 lb. and 50/59 lb. per hide. In other words, the buyer knows whether he is purchasing Primes or Seconds, heavies or lights even though the price is based on weight of the hide.

---

* In *Delhi Province*, the *United Provinces* and *Bengal*, the wet-salted kips are quoted as " per score " also.

†In *Madras Province*, dry-salted hides are quoted as " As. per lb."

On account of adulteration or loading of hides with extra quantities of salt, mud, sand or not trimming them sufficiently, which practices are unfortunately too common in India, there is, however, always a danger in purchasing on the basis of weight. But as proposed in a later chapter, these defects could be well cared for by specifying in the schedule, the particulars of cure, etc., so that " loaded " hides may not be overvalued.

It is, therefore, recommended that the various associations of tanners and shippers should take steps to introduce the system of quoting the price of hides (irrespective of cures) on the basis of weight, *i.e.*, per standard maund, for each grade and weight group. This would render the comparison of prices in different markets easier and a system of price intelligence could be built up to the advantage of the hide trade. This aspect is discussed further in a subsequent section.

B.—Factors affecting the price of hides.

Kips and buff hides have distinct uses and one cannot be substituted for the other. Nor can there be any mistake about their identity. Consequently, there are two independent series of prices with marked differences and rarely, if ever, does the price of one type show sympathetic rise and fall on account of variation in the price of the other. There are, however, several common factors which influence their prices in general. Apart from the usual influences of supply and demand in Indian or foreign markets, the special factors which affect their prices are (*i*) fallen or slaughtered type, (*ii*) type of cure to which the hides are put to, (*iii*) weight of the pelt, (*iv*) distinction due to sex, (*v*) quality or the absence of defects, (*vi*) district of origin and (*vii*) effects on quality due to seasons. These are discussed below separately.

(1) FALLEN OR SLAUGHTERED TYPE.

Hides removed from dead animals are generally of a poorer quality than those of slaughtered animals. This factor has, therefore, a considerable influence on the price, even though the cure of the two types may be the same. The figures in the following table explain the position.

Comparison of prices of fallen and slaughtered hides at Jubbulpore and Nagpur.

(Per maund).

—	Raw-green.		Dry-framed.		Wet-salted.	
	Fallen.	Slaughtered.	Fallen.	Slaughtered.	Fallen.	Slaughtered.
	Rs. A.	Rs. A.	Rs. A.	Rs. A.	Rs. A.	Rs. A.
Jubbulpore ..	6 3	12 14	13 6	30 5	7 3	14 6
Nagpur ..	7 11	13 14	18 0	30 14	9 4	15 7
Average ..	6 15	13 6	15 11	30 10	8 4	14 15
Percentage premium over fallen type	..	+93	..	+95	..	+81

The above example shows that the price of fallen hides is about half of the slaughtered ones but the difference in the different cures may not be the same. For instance, when they are cured by the wet-salting method, the difference in prices between the two is not as great, although even then slaughtered hides fetch about 81 per cent higher prices.

(2) TYPE OF CURE.

The preceding table explains to an extent the variation in the price of differently cured hides, but for the purpose of comparison the calculations have to be based on " a pound of hide-substance ". The average dry matter and moisture in raw and differently cured kips may be taken as under :—

Proportion of hide-matter and moisture and salt in a pound of raw and differently cured kips.

(In ounces).

Constituents.	Raw-green.	Wet-salted.	Dry-salted.	Dry-framed.
Dry hide-matter	6½	9	11	14
Moisture and salt	9½	7	5	2

It thus appears that the proportion of moisture depends upon the type of cure. Apart from loss of weight, the cost of salt utilised and labour charges incurred influence the price per maund. The prices in the table below explain the position.

Prices of kips—raw and cured by different methods—at the Calcutta market.

——	Raw-green.	Wet-salted.	Dry-salted.	Dry-framed.
	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.
Per maund of kips	6 7 0	9 14 0	15 13 0	26 2 0
Per lb. of hide-substance	0 3 1	0 3 5	0 4 6	0 5 10

As the outturn of leather is proportional to the hide-substance in the hide, the above analysis shows how the cost of hide works out and how the cure influences the price.

(3) Weight of pelt.

The weight is dependent upon the size and thickness of the pelt. Both these factors are influenced by age, breed and physical condition of the animal at the time of death or slaughter. It is observed that in India, raw-green kips vary in weight from 10 to 50 lb. per piece and raw-green buff hides from 25 to 120 lb. In extreme cases, they may even weigh more. Further, the various uses to which the hide or the leather made from it can be put to, depend, to some extent, on the thickness or weight per square foot of the hide in its raw condition. In order to regulate the purchases according to the requirements of the buyers and the trade at large, hides are, therefore, classified into different weight groups—generally three, *viz.*, Heavy, Medium and Light. Irrespective of other factors, prices differ according to the above weight groups.

The influence of weight on the prices of kips and buff hides is, however, quite the opposite. With the former, the lighter a kip, the more expensive it is, as it fetches better returns when disposed of as leather, which is sold on measurement (per square foot) basis. On the other hand, the best price per maund is received, not for the lightest buff hides, but for the heaviest. The heavier buffalo hides can produce stouter and heavier leather, which is sold on weight (per lb.) basis and are capable of being split into layers. The table below deals with the average prices of raw-green hides at the *Agra* market.

Average prices of raw-green hides at Agra market according to weight basis.
(Per maund).

——	Heavy.	Medium.	Light.
	Rs. A.	Rs. A.	Rs. A.
Kips	9 9	11 7	12 10
Buff hides	9 12	8 6	6 2

The weight range for raw-green trimmed kips is 28 lb. and above for Heavy, 18 lb. to 28 lb. for Medium and 10 lb. to 18 lb. for Light. For buff hides, the ranges are 60 lb. and above for Heavy, 40 lb. to 60 lb. for Medium and 25 lb. to 40 lb. for Light. The prices relate to the average of all qualities.

As explained above, the figures show that the lighter the kip, the more expensive it is and the reverse is the case with the buff hide.

(4) DISTINCTION DUE TO SEX.

Normally the hides of female animals are lighter than those of the males and have finer and more compact grain. The hides of uncastrated males, although heavier, are inclined to be spready and spongy. For these reasons the hides of bulls are not preferred by tanners and some do not accept them at all or buy them only at a lower price. It is, however, found that castration of the male at a young age changes the character of the hide and it nearly resembles that of the female. Thus in India, where most of the male calves are castrated for turning them into draught bullocks, hides of the young bullocks and those of the cows do not show much difference in quality, utility or price. The yoke-mark on the neck portion of the bullock hide, however, reduces its value to some extent.

(5) QUALITY OF THE HIDE.

Of all the factors, the consideration of quality or the presence or absence of defects in the hide is of the greatest importance in fixing the price. This subject is, however, discussed in detail in the chapter on " Quality and Grading of Hides ", and here the matter is reviewed briefly.

The best hide is one which is obtained from a young (but not too immature), healthy, well-cared for animal, without having any mechanical defects (*e.g.*, scars, cuts, bruises, etc.) either on the flesh or on the hair side of the pelt. Proper and timely curing of the hide is equally important for preserving its quality and if this is not done carefully the hide loses its value. All factors which reduce the ultimate value of the leather produced from the hides have a bearing on prices. In order to assess the value correctly, it is necessary to classify or sort hides into different grades according to the number and type of defects each pelt possesses. It is true that in all cases hides may not be classed into grades before sales, but the ultimate buyer, whosoever he may be, examines each hide or pack and assesses the value according to his notions of quality.

The effect of quality on prices is shown in the following table. The grades, " A ", " B ", " C " and " Rejection " are based on the AGMARK specifications as laid down in the Agricultural Produce Grading and Marking) Hide Rules, 1937.

Price of wet-salted kips on the basis of AGMARK grades, (current during September, 1940).

Grading station.	Price per score.			
	"A".	"B".	"C".	" Rejection".
	Rs.	Rs.	Rs.	Rs.
Delhi	165	155	140	78
Agra	155	135	106	53
Bareilly	130	107	90	62
Rampur	145	126	107	75
Average of four markets ..	149	131	111	67
Price per hide	7-7	6-9	5-9	3-6

The figures represent the average prices for Heavy, Medium and Light hides. They could be interpreted in a variety of ways, but show clearly the wide difference that exists in the price of lower and top quality hides or even between any two grades. This shows how important it is, both from the buyers' and sellers' points of view, to properly grade and mark the hides before sale. This aspect is discussed in the chapter on "Reorganisation of Hide Marketing".

(6) DISTRICT OF ORIGIN.

In a large country like India, the size and type of cattle and the conditions under which they live and grow differ considerably from tract to tract. The large cows and buffaloes of the north and west are very different from their stunted cousins of the east and south. The cattle in the central parts of India are again different. Accordingly, hides produced in the different parts are of dissimilar qualities and command different prices. The size of the animal reflects upon the shape, dimensions or the " pattern " of the hide obtained from it and this is yet another reason why prices vary according to areas.

The table below gives an idea of the variation in price, for the same type of hides, in different areas.

Price per sukti kip—of average quality and weight—as available at different markets.

Name of market.	Price per *sukti* kip.	Name of market.	Price per *sukti* kip.
	Rs. a.		Rs. a.
Lahore	2 14	Muzaffarpur	3 15
Multan	2 12	Darbhanga	3 8
Karachi	2 4	Gaya	2 14
Jodhpur	2 4	Nowgong (Assam) ..	2 0
Delhi	2 6	Calcutta	2 4
Meerut	4 9	Nagpur	2 15
Agra	4 12	Hyderabad	1 8
Bareilly	4 5	Bombay	2 9
Cawnpore	3 15	Bangalore	2 6
Lucknow	3 11	Madras	2 8

The prices relate to *suktis* (mostly fallen) as available in different parts of the country. They were all collected during the months of February and March, 1937. The figures should not be taken to mean that *Agra suktis* are about two times costlier than those of *Nowgong* (*Assam*). Actually these are altogether two different qualities and there could be no comparison, but the figures merely show that due to the factors described in the beginning of the section, hide prices are not the same in different parts of the country.

(7) Influence of seasons.

In a country like India, where the majority of cattle are dependent upon grazing rather than stall-feeding, the availability of pastures has some bearing on the quality of hide produced in different seasons and, consequently, on their prices. The monthly variations in prices, due to other factors, are described in a later section, but here only the broad influence of " seasons " on price of hides is dealt with.

When feed is fairly well available and when the weather is not too severe, the condition of the animal and, with that, the quality and thickness of the hide-substance improve. Generally, the better quality hide are produced during October to March, whereas during the warmer part of the year, the quality is not so good. The table below gives two examples.

Effect of seasons on prices (average for 1935—1938).
(Per maund).

Name of market.	*Sukti.*		Dry-framed.	
	Winter (Nov. to Apr.).	Summer (May to Oct.).	Winter (Nov. to Apr.).	Summer (May to Oct.).
	Rs.	Rs.	Rs.	Rs.
Lahore	22	19	37	22
Cawnpore ..	24	19	40	31
Average of 2 markets.	23	19	38·5	26·5
Percentage of difference.	..	—17·4	..	—31·2

There may be other causes, too, for the variation of prices but it is observed that there is a distinct change in seasonal prices almost every year.

The shippers make a distinction even in quoting and marking of the winter hides. For instance, they add the letter " W " in marking the hides or bales produced during the winter as under :

Code.	*Description.*
AACSW.	Agra Arsenicated Cow Slaughtered, Winter.
AACDW.	Agra Arsenicated Cow Dead, Winter.
AACRW.	Agra Arsenicated Cow Rejection, Winter.

The difference between the prices of the two seasons is generally 10 to 15 per cent, but for the summer production the shippers do not suffix any letter in the marking of the hides.

C.—Seasonal variation in prices.

Partly due to increased demand from tanners and shippers and partly as a result of the natural improvement in the quality of the pelt during winter months, hide prices generally rule higher from October to March than during the other months. The increase in demand may be judged from the monthly quantities of hides received at important markets already discussed on page 98 in the chapter on " Utilisation and demand".

There is, however, not much difference in the seasonal behaviour of kip and buff hide prices, although the variations in the former series are slightly more pronounced.

(1) Kips

Monthly prices of differently cured kips as sold at some of the important markets are reproduced in the table below and the diagram facing this page.

Monthly variations in the prices of kips.

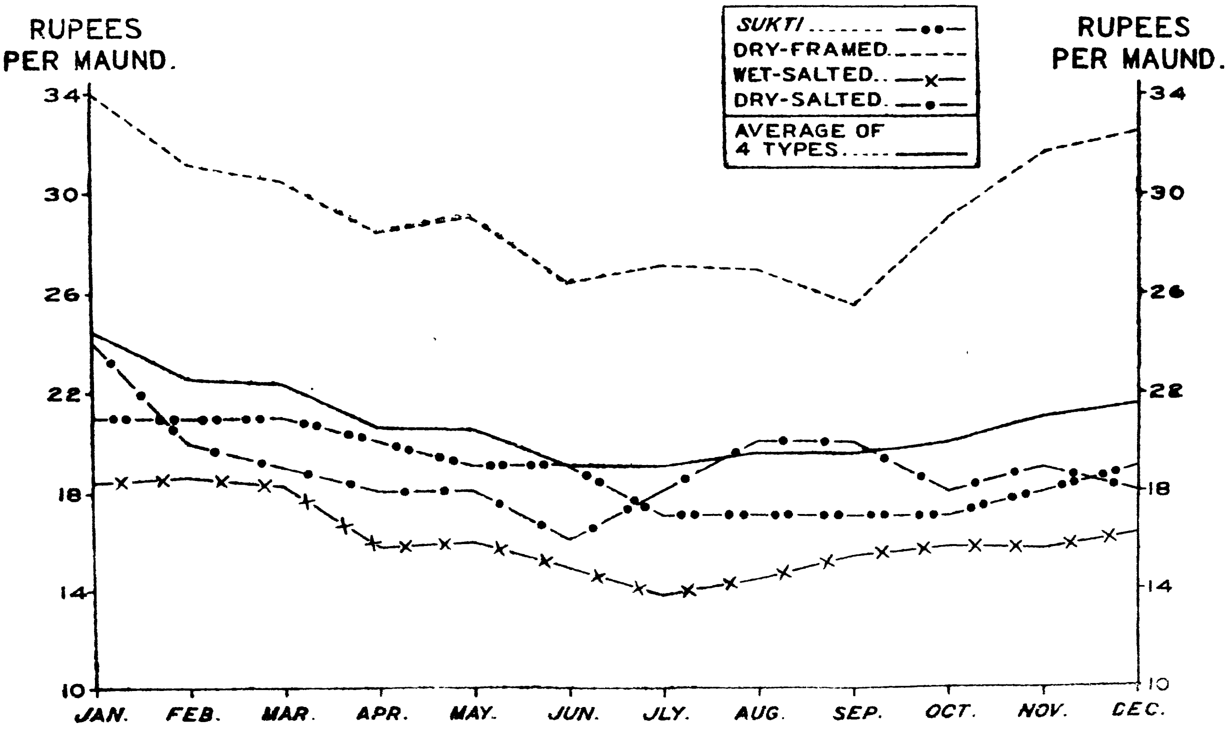
(Per maund).

Month.	*Sukti.*	Dry-framed.	Wet-salted.	Dry-salted.	Average of 4 types.	Monthly indices based on the annual average of 4 types.
	Rs. A.	Rs. A.	Rs. A.	Rs. A.	Rs. A.	
January ..	21 0	34 3	18 6	24 0	24 6	117
February ..	21 0	31 4	18 9	20 0	22 11	109
March ..	21 0	30 8	18 2	19 0	22 3	107
April ..	20 0	28 7	15 13	18 0	20 9	99
May ..	19 0	29 0	15 13	18 0	20 7	98
June ..	19 0	26 4	14 13	16 0	19 0	91
July ..	17 0	27 1	13 12	18 0	18 15	91
August ..	17 0	26 12	14 5	20 0	19 8	94
September ..	17 0	25 10	15 6	20 0	19 8	94
October ..	17 0	29 1	15 12	18 0	19 15	96
November ..	18 0	31 3	15 9	19 0	20 15	101
December ..	19 0	32 9	16 2	18 0	21 7	103
Annual average	18 13	29 5	16 1	19 0	20 13	(100)

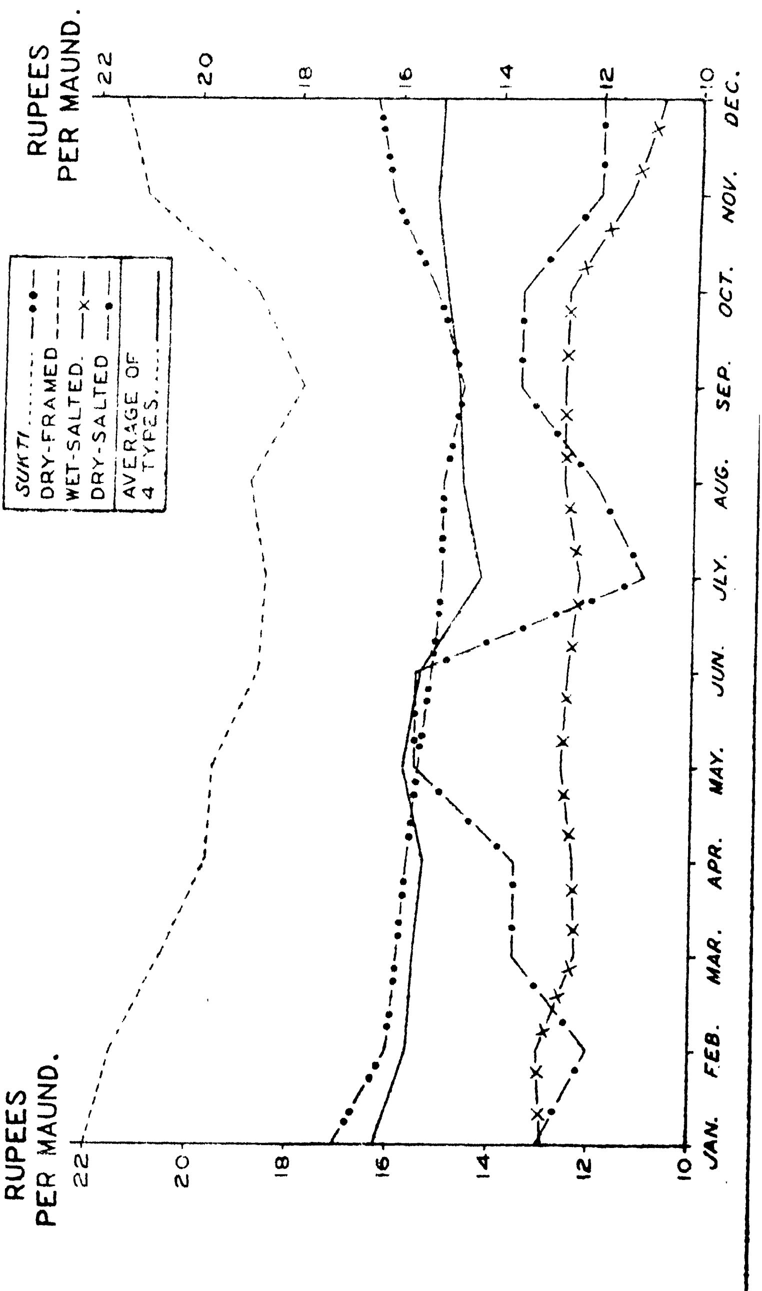
These prices relate to the markets at *Agra*, *Bangalore*, *Calcutta*, *Cawnpore*, *Delhi*, *Jubbulpore*, *Karachi*, *Lahore*, *Madras* city, *Patna* and *Rampur*. They are the averages of all grades and weights of kips and generally relate to the years 1936 to 1938.

It will be seen from the diagram facing this page that monthly prices of dry-framed, *sukti* and wet-salted kips run more or less parallel. They are all low during the summer months—between April and September. These are the warm and wet months in most parts of the country and present difficulties in curing, tanning and, at places, transporting, which tend to have a depressing effect on the prices. The lowest

MONTHLY VARIATIONS IN THE PRICES OF KIPS.



MONTHLY VARIATIONS IN THE PRICES OF BUFF HIDES.



level is touched during the month of July when the average prices are about 9 per cent below the mean. The highest peak is reached during the month of January, when the average run of prices is approximately 17 per cent above the normal. This can be attributed mainly to the improvement in the quality of hides and the brisk demand from the shippers and tanners.

The price of dry-salted kips, however, shows somewhat different variations than the three other types. Though the highest price is obtained in January—as in the other cases—very high price, for this type, prevails during August and September when the prices for the other types come almost to the lowest level. The reasons may be that during this period when good quality hides in other types of cure are not available in large numbers, shippers have to depend mainly on dry-salted hides, which causes a rise in their price during this time of the year.

(2) BUFF HIDES.

The table below deals with the monthly prices of buff hides at important markets. The diagram facing this page shows their course during the year.

Monthly variation in prices of buff hides.

(Per maund).

Month.	*Sukti.*	Dry-framed.	Wet-salted.	Dry-salted.	Average of 4 types.	Monthly indices based on the annual average of 4 types.
	Rs. A.	Rs. A.	Rs. A.	Rs. A.	Rs. A.	
January ..	17 1	22 0	12 15	13 0	16 4	107
February ..	16 1	21 8	13 0	12 0	15 10	102
March ..	15 12	20 8	12 6	13 8	15 8	102
April ..	15 11	19 11	12 7	13 8	15 5	100
May ..	15 7	19 9	12 9	15 8	15 12	103
June ..	15 3	18 11	12 8	15 8	15 7	101
July ..	15 1	18 9	12 6	11 0	14 4	93
August ..	15 1	18 13	12 10	12 0	14 10	96
September ..	14 11	17 14	12 11	13 8	14 11	96
October ..	15 3	18 11	12 10	13 8	15 0	98
November ..	16 3	21 1	11 7	12 0	15 3	100
December ..	16 8	21 8	10 14	12 0	15 4	100
Annual average	15 11	19 14	12 6	13 1	15 4	(100)

These prices relate to the markets at *Agra, Bombay, Calcutta, Cawnpore, Delhi, Karachi, Lahore* and *Rangoon*. They are averages of all grades and weights of buff hides and generally relate to the years 1936 to 1938.

The remarks applicable to the variations in prices of kips are generally true for buff hides also. A comparison of the diagram facing page 113 with that of the kip prices, however, shows that as far as the average prices of the four types are concerned, buff prices indicate lesser variations. In their case the highest peak is also reached in the month of January but the rise above the average is only 7 per cent, as against 17 per cent in the case of kips. The lowest price is 7 per cent below the mean, as against 9 per cent for kips. It is, however, noticed that the dry-salted buff hide prices show rather an erratic course during the year. There is a sharp depression during the monsoon months of July and August. This is due to the unsatisfactory results obtained in preparing dry-salted goods at this time of the year and accordingly their demand and prices are affected.

D.—Prices in relation to quality.

In a previous section, it has been briefly pointed out that of all factors the intrinsic quality of the pelt has the greatest influence on its price. Here the subject is further elucidated and available records of differential prices are reproduced. As the classifications of shippers and tanners differ, these are treated below separately.

(1) SHIPPERS' (HAMBURG) CLASSIFICATION.

The shippers usually purchase mixed lots from the open markets and classify the hides in their godowns at ports, mainly at *Calcutta* and *Karachi*, before shipment. Their classification is known as " Hamburg classification " and is described in detail in the chapter on " Quality and Grading of Hides ". The prices in the table below are obtained from a shipper's invoice and relate to a consignment despatched in November, 1935, from *Karachi*.

Prices of " Agra Arsenicated " (A.A.) framed cow hides, according to shippers' (Hamburg) classification in November, 1935, at Karachi.

(Per 28 lb.).

Grade according to Hamburg classification.	Average weight per hide.							
	5/6 lb.		8/9 lb.		12/14 lb.		16/18 lb.	
	Rs.	A.	Rs.	A.	Rs.	A.	Rs.	A.
1. " A. A. Commissariat Slaughtered, Winter."	17	0	14	0	13	8	13	0
2. " A. A. Slaughtered, Winter." ..	15	0	12	0	11	8	..	
3. " A. A. Cow Dead, Winter." ..	11	0	9	8	9	0	..	
4. " A. A. Cow Rejection, Winter." ..	9	0	8	8	8	0	..	
5 " A. A. Cow Rejection Double." ..	6	0	5	8	5	0	..	

Due to differences in grade and weight, the variations in prices are quite perceptible. For obvious reasons, " Commissariat Slaughtered " hides are sold at a higher price than ordinary or district " Slaughtered ". It, however, does not necessarily mean that all " Commissariat Slaughtered " are obtained from cantonment slaughterhouses. In the dead or fallen types there are three grades, with different prices. The weight of the hide, an important quality factor, influences the price considerably. As said before, the lighter the kip the more expensive it is, all other factors remaining the same. It may be added here that the correlation between the prices of different grades or weight groups normally remains constant. But if there is a special demand for any particular type and the normal supplies are unable to meet it, prices react accordingly.

(2) FACTORY TANNERS' CLASSIFICATIONS.

Apart from a large number of South Indian tanners who prepare dressed hides mainly for export, the number of large factory tanners in the country is very limited. They do not have a common method of classifying the hides, but may pay differential prices according to quality. In the case of some of the large tanners at *Cawnpore*, who obtain the hides from distant centres, it is customary for them to send out price or purchase offers on quality basis to their agents. Certain conditions govern the acceptance of hides consigned to the tanners, according to their purchase offer. One such purchase offer, issued by a premier tanner at *Cawnpore* in April 1939, is reproduced below :—

Purchase offer of a tanner at Cawnpore for wet-salted kips.

Grade.	Heavies.		Mediums.		Lights.		Calves.
	lb. per rupee.	Maximum price. limit.	lb. per rupee.	Maximum price limit.	lb. per rupee.	Maximum price limit.	lb. per rupee and maximum price limit.
	lb.	Rs. per score.	lb.	Rs. per score.	lb.	Rs. per score.	
" Primes " ..	3¾	115	3¼	115	2½	110	All round 3 lb. per rupee, with the maximum price limit of Rs. 47-8-0 per score.
" Seconds " ..	4	105	3¼	105	2½	100	
" Rejects " ..	4¼	100	3¼	100	2¾	95	
" D. Rejects "	4¾	90	4	90	3	80	
" Triples " ..	5½	75	4¾	75	3¼	72—8	
" Warbles " ..	not required.	not required.	5	70	3¼	72—8	

The above rates are subject to the following conditions.

(1) The weight limits should be :—

Heavies	***20 to 24 lb.***	***Average 21 lb.***
Mediums	***17 to 20 lb.***	***Average 18 lb.***
Lights	***9 to 17 lb.***	***Average 13 lb.***
Calves	***5 to 9 lb.***	***Average 7 lb.***

(2) Delivery to be made at the godown of the tannery, at *Cawnpore*.

(3) The selections and weights shall be as determined by the tanner on receipt of the hides at the godown.

(4) The maximum price limits shall be applicable for each selection. For example, if " Heavy Primes " average out to 24 lb., they will be paid for at Rs. 115 per score and not at 3¾ lb. per rupee.

(5) All rates specified in the purchase offer are subject to change without notice Suppliers would be paid for, at rates ruling at the time of arrival of hides in the godown.

(6) Any hide, considered by the tanner to be unsuitable for any of the above selections, will not be accepted and will remain in the godown, at owner's risk.

Few tanners are, however, able to receive hides under the above conditions and particularly under stipulations of clauses (3) and (6) above. The system virtually means that the hide commission agents have to send their goods right up to the godown of the buyer, to be assessed by his godown staff. These agents have also to be prepared to take away hides which, in the opinion of the tanner, are unsuitable for his purpose. In this respect, the difficulty of a distant supplier could be well realised.

Generally speaking, the position of a buyer is always more privileged than that of the seller. But it is perhaps not sufficiently realised by the hide sellers at present that, to a great extent, the insistence on the part of the buyers for examining the hides at their godowns is due to the disorganised state of hide marketing and the fact that buyers cannot put any reliance in the sorting or grading done by sellers. Once the latter organise themselves and adopt a uniform system of grading and marking the hide according to pre-determined specifications, there should be no difficulty on insisting upon the buyers to purchase their requirements from the open market. Even if hides have to be consigned to the godowns of the buyers, as is the case with other raw products like cotton, wheat, etc., the goods should be sold beforehand on grade basis or on the basis of commercial descriptions of each type. On delivery, only the weight of the consignment may be determined by the buyer and he may also be allowed to adjust any discrepancy in the quality with the consent of the seller. As things stand at present, there is no scope even for an arbitration.

(3) South Indian tanners' selections.

Most of the hides used by the South Indian tanners are purchased from the up-country markets of *Cawnpore* and *Calcutta*. In these markets the sorting is known as (*i*) " Superior Selection " and (*ii*) " Madras or Inferior Selection ". Actually the " Superior Selections " are seldom purchased in any large quantity by the South Indian tanners and generally the

"Madras or the Inferior Selections" are in demand from them. Recently, an intermediate selection called "Medium Selection" has also been introduced in the wet-salted kips but complete data regarding its prices are not available. The prices for the former two "Selections" are quoted in the table below :—

Comparative prices of wet-salted kips for "Superior" and "Madras or Inferior Selections" at Cawnpore market.

Grade.	Price per score.	
	1939.	1940.
1. "Superior Selection"	Rs. 82 to Rs. 93	Rs. 118 to Rs. 130
2. "Madras or Inferior Selection" ..	Rs. 51 to Rs. 66	Rs. 60 to Rs. 66

The figures showing the variations according to quality are quite clear and do not need further interpretation.

(4) AGMARK GRADES.

Since the establishment of experimental hide grading stations at some of the slaughterhouses, under the Agricultural Produce (Grading and Marking) Act, 1937, the prices of different grades of AGMARK hides have been maintained. As no appreciable quantity of hides has been sold on the basis of grades, the figures quoted below merely indicate the price variations between the grades. The latest figures for 12 months ending May, 1941, are given in the tables below :

Prices of raw-green kips according to AGMARK grades.

(Per score).

Grading station.	"A".	"B".	"C".	"Rejection".*
	Rs. A.	Rs. A.	Rs. A.	Rs. A.
Delhi	122 8 to 181 4	105 0 to 145 0	78 12 to 115 0	52 8 to 75 0
Agra	118 12 to 152 8	98 12 to 122 8	70 0 to 93 12	32 8 to 45 0
Rampur	107 8 to 141 4	91 4 to 122 8	77 8 to 101 4	56 4 to 78 12
Bareilly	126 4 to 132 8	102 8 to 107 8	85 0 to 92 8	51 4 to 56 4
Garden Reach (Calcutta)	62 8 to 82 8	51 4 to 67 8	36 4 to 52 8	21 4 to 30 0

---

*This is not a statutory grade designation under the Hide Grading Rules, but in order to show that the hides which do not fall under "A", "B" or "C" grades, have also been inspected, are called "Rejections".

Prices of raw-green buff hides according to AGMARK grades.
(Per maund).

Grading station.	"A".	"B".	"C".	"Rejection".
	Rs. A.	Rs. A.	Rs. A.	Rs. A.
Karachi	18 8 to 19 3	13 12 to 14 7	10 4 to 10 15	8 1 to 8 10
Delhi	20 4 to 22 7	17 3 to 19 6	14 5 to 15 12	10 12 to 12 1
Agra	16 12 to 18 15	14 4 to 15 3	12 2 to 13 5	9 5 to 10 13
Bareilly	24 4 to 24 14	17 4 to 18 2	11 3 to 11 14	9 2 to 9 10
Garden Reach (Calcutta)	12 9 to 14 9	12 6 to 15 10	8 13 to 10 6	6 0 to 6 12

In the above tables, under each grade, a range of price is given. This covers the differential prices for Heavy, Medium and Light weight hides. Differences in price, under the same grade also, will be noticed at the various grading stations. This is due to regional variations in the quality. All the prices are, however, for raw-green fresh slaughtered hides.

(5) PRICES PAID BY THE GOVERNMENT HARNESS AND SADDLERY FACTORY, CAWNPORE, FOR THE QUALITY REQUIRED BY IT.

For the manufacture of leather goods for army use, the Government Harness and Saddlery Factory, *Cawnpore*, purchases in normal times 200 to 300 raw hides per day and do their own tanning. They require what may be called the " pick " or " cream " of hides available in up-country markets. Besides, their specifications are very strict and they do not normally examine the hides until they are limed. After about a week's liming, the hides are in milk-white condition and all possible defects, both on the hair and the flesh sides, are easily perceptible, being magnified to some extent. Hides not coming up to their standard are returned to the suppliers and at times the rejections are as high as 70 to 80 per cent. Normally about 20 to 25 per cent of the hides are rejected after they have been limed and examined.

Under the circumstances, it is obvious that the price paid by the factory should be above that of the ordinary run of market prices. It is observed that the factory has to pay for the acceptable hides approximately 25 to 40 per cent above the usual price of " Primes " or " A " grade hides.

E.—Note on hide prices in some of the other countries.

On account of regional differences in quality and type, it has been stated in a previous section that it is not possible to compare hide prices even for those produced in the different parts of India. Naturally, therefore, the comparison of Indian prices with those in different countries of the world should be even more difficult and, apart from indicating the range of prices, the data cannot serve any other purpose. Actually, however, the information on hide prices in other countries is not exhaustive. In the table below, such information as is readily available has been tabulated. The original quotations are given in pence per pound but in the table they have been converted into Indian currency.* The figures show wide variations in respect of different countries and types.

Prices of wet-salted hides (light cure) of different countries† in the United Kingdom.

(Per pound).

Type.	Average weight per hide.	1936.	1937.	1938.
	lb.	A. P.	A. P.	A. P.
"B. A. Frigorifico"	51/61	7 3	6 1	5 8
"N. S. Wales Meats" ..	40/45	5 7	5 2	4 7
"Johannesburg"	Over 50	5 0	4 8	4 3
"Manchester Ox" ..	60/69	5 5	4 11	4 3
"Manchester Ox" ..	50/59	4 8	4 8	4 0
"Manchester Cow" ..	60/69	4 9	4 0	3 8
"Manchester Cow" ..	50/59	4 9	3 11	4 1
"English Calf"	17/24	6 7	5 0	5 11
"English Calf"	9/16	9 9	6 3	7 0
"English Calf"	Under 9	10 5	7 1	7 1

F.—Trend of prices.

(1) HIDES FOR EXPORT.

Generally speaking, both export demand and internal consumption, influence the year to year prices of hides in India. It is, however, unfortunate that although the export and internal trade in hide is of considerable magnitude, an adequate price intelligence service has not been developed yet. Except for occasional price quotations appearing in the press for certain markets, there are no published records of prices. The Tanners' Federation of India, which covers all the important tanners as well as the various hides merchants' and shippers' associations, does not publish hide prices. On account of these reasons it has not been possible to obtain continuous long-range price data for different types of hides in the internal markets. The only source of calculating long-range prices has been the " declared values " of hides exported from India. Here also, prior to 1912-13, the values of kips and buff hides were not recorded separately and only a combined value of the total hides exported is available. The annual declared values have been converted into price per maund for the 59 years prior to 1939-40 and are reproduced in the table below and in the diagram facing this page.

---

* Rate of exchange calculated at Re. 1=1*s*. 6*d*.

† Compiled from "The Leather World", January 6, 1938.

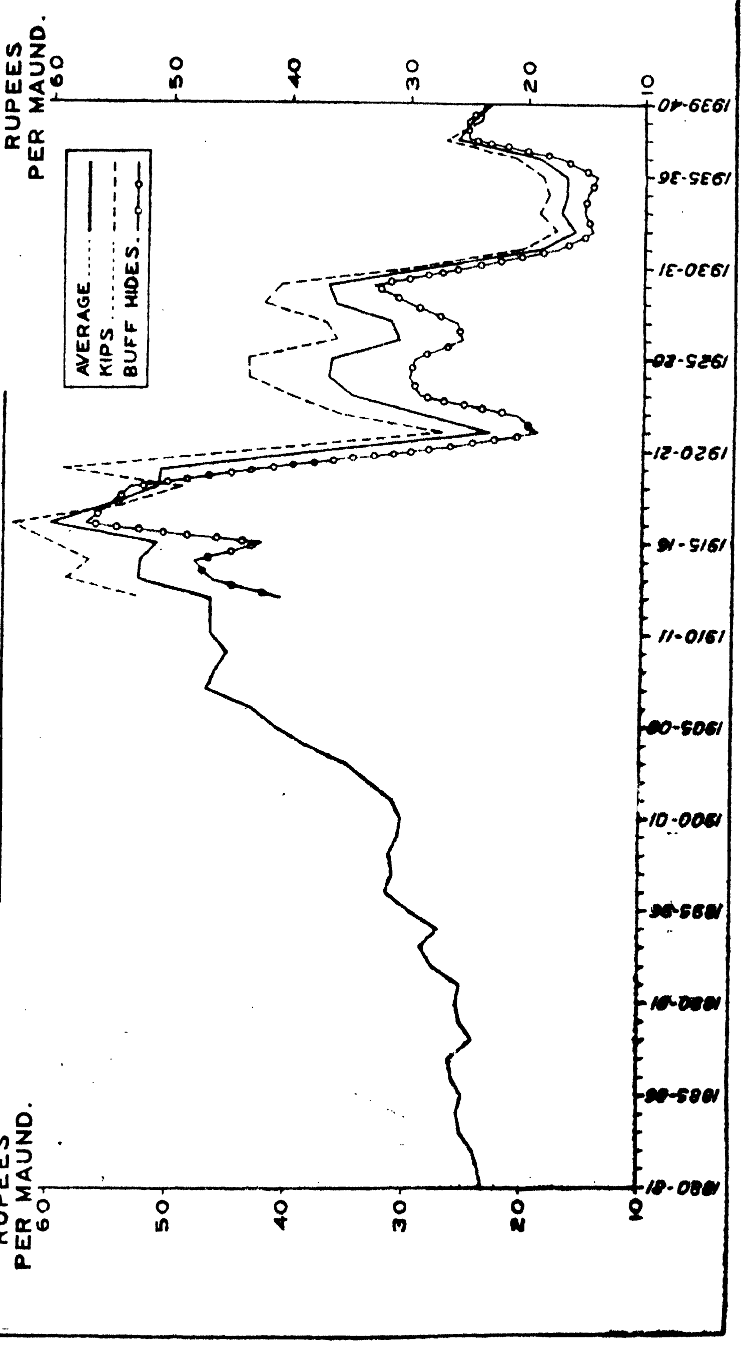
The figures of declared values relate to export trade only. This trade, however, has always been important, covering approximately a third of the annual production of hides in India. Further, mostly *sukti* and dry-framed hides are exported to which alone the prices in the table and diagram refer, but there is usually a close correlation between these and the prices of other types of hides required by tanners in India. Generally, therefore, the trend shown in the diagram should be taken as representative of the Indian hide prices during the 59 years prior to 1939-40.

Declared values of raw hides exported from India.

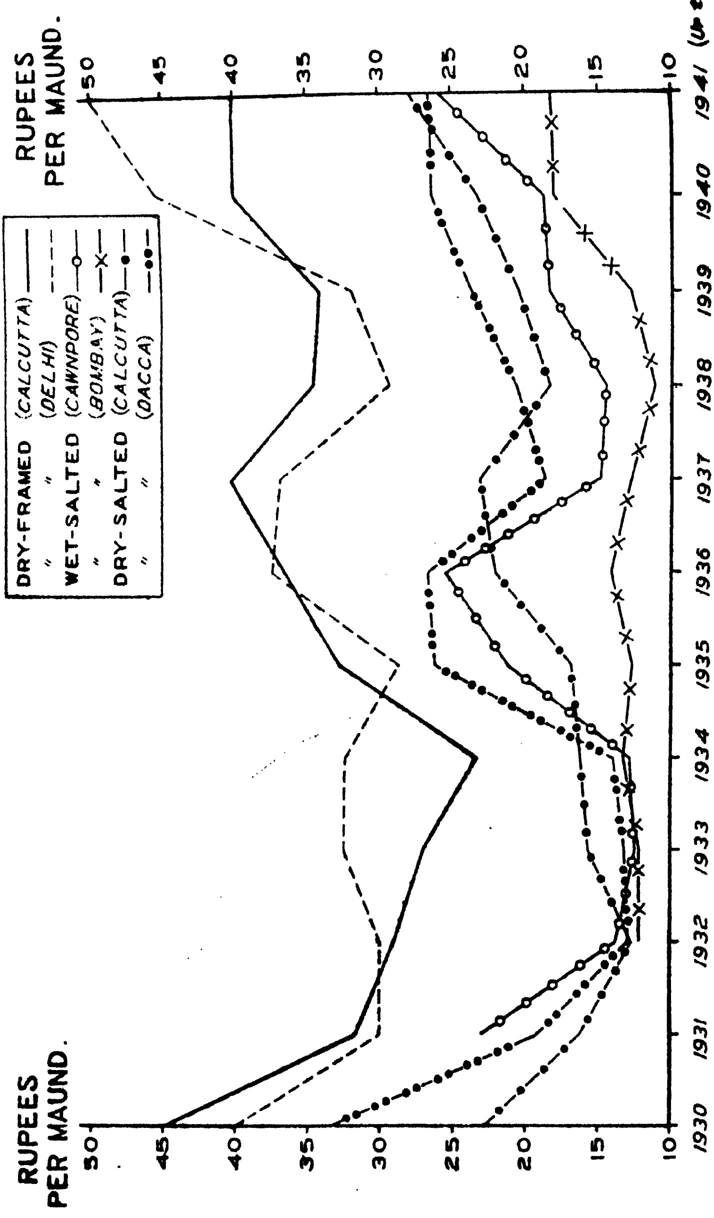
(Per maund).

Year.	Average for kips and buff hides.	Year.	Average for kips and buff hides.	Year.	Average for kips and buff hides.
	Rs. A.		Rs. A.		Rs. A.
1880-81	23 2	1891-92	25 2	1902-03	33 0
1881-82	23 8	1892-93	27 6	1903-04	34 11
1882-83	24 1	1893-94	28 6	1904-05	38 7
1883-84	25 0	1894-95	27 0	1905-06	40 12
1884-85	25 4	1895-96	29 8	1906-07	43 2
1885-86	24 12	1896-97	31 9	1907-08	46 11
1886-87	25 12	1897-98	30 12	1908-09	45 15
1887-88	26 0	1898-99	31 2	1909-10	45 0
1888-89	24 1	1899-00	30 7	1910-11	46 9
1889-90	25 2	1900-01	30 3	1911-12	46 8
1890-91	25 5	1901-02	31 2		

DECLARED VALUES OF EXPORTS OF HIDES FROM INDIA FOR THE LAST 60 YEARS.



TREND OF KIP PRICES AT IMPORTANT MARKETS.



Declared values of raw hides exported from India—contd.

(Per maund).

Year.	Kips.	Buff hides.	Average for kips and buff hides.	Year.	Kips.	Buff hides.	Average for kips and buff hides.
	Rs. A.	Rs. A.	Rs. A.		Rs. A.	Rs. A.	Rs. A.
1912-13	52 10	40 8	46 9	1926-27	35 14	25 7	30 10
1913-14	58 7	46 13	52 10	1927-28	37 0	25 15	31 8
1914-15	56 13	48 0	52 7	1928-29	42 4	30 3	36 4
1915-16	59 14	42 1	51 0	1929-30	40 12	32 14	36 13
1916-17	63 4	57 1	60 2	1930-31	29 1	26 3	27 10
1917-18	53 11	55 3	54 7	1931-32	20 9	17 12	19 2
1918-19	48 11	53 4	51 0	1932-33	17 7	14 13	16 2
1919-20	59 1	41 11	50 6	1933-34	18 14	15 8	17 3
1920-21	42 7	29 5	35 14	1934-35	18 4	15 0	16 10
1921-22	26 14	19 3	23 0	1935-36	18 8	14 8	16 8
1922-23	35 11	21 4	28 8	1936-37	20 12	17 9	19 2
1923-24	39 11	29 1	34 6	1937-38	26 14	24 14	25 14
1924-25	43 10	30 0	36 13	1938-39	24 3	25 2	24 10
1925-26	43 11	29 10	36 10				

From the diagram facing page 120 and the above table, it will be seen that for about 20 years, from 1880 to 1900, hide prices rose steadily from about Rs. 23 per maund to about Rs. 30 per maund. Thereafter, for the next 13 or 14 years, that is, up to the beginning of the 1914—18 war, the rise was faster and considerable. The prices at that time were in the neighbourhood of Rs. 52 per maund. Then came the Great War. For the first 2 years there was no appreciable increase and in 1916 prices actually decreased by about one rupee per maund. Thereafter, prices rose considerably and in 1918 they reached the maximum limit of Rs. 63 per maund. Then came a crash and within 3 or 4 years after the end of the 1914 war, *i.e.*, in 1922, the prices fell to Rs. 23 per maund. For the next ten years up to 1930 there was again a tendency for prices to rise and the values during this period may be taken to represent normal years. However, an economic depression began in the year 1929-30 and with the general drop in commodity prices all over the world, Indian hide prices also suffered for the next 6 or 7 years. During this period, that is, between 1930 and 1936, hide prices reached the lowest level for any of the previous 50 years. The dry-framed buff hide prices were even lower than Rs. 15 per maund. With the year 1937-38, prices again rose very perceptibly but the rise was short-lived. They began to decrease again and one cannot say what the position would have been if the present war had not come. The very first year of the war checked the decrease whereas during the second year, that is, in 1941, there has been a considerable improvement in the hide prices. As the quantities and values of export during the war period are not available for publication, it has not been possible to show this rise in the diagram under discussion, but in the next two diagrams the rise of prices in the internal markets due to the war are clearly indicated.

(2) HIDES SOLD FOR HOME USE.

As pointed out in the beginning of the above section, it has not been possible to obtain long range figures for prices of hides in internal markets. Some information has, however, been collected from the merchants at important markets for the last 10 or 12 years and it should give a fair idea of recent conditions. The trends of kip and buff hide prices are given separately for the sake of convenience.

(*a*) *Kips.*—Prices for the various types of cures and at different markets from the year 1930 to April 1941 are given in the table below. The year 1930 may be taken as the beginning of the depression period.

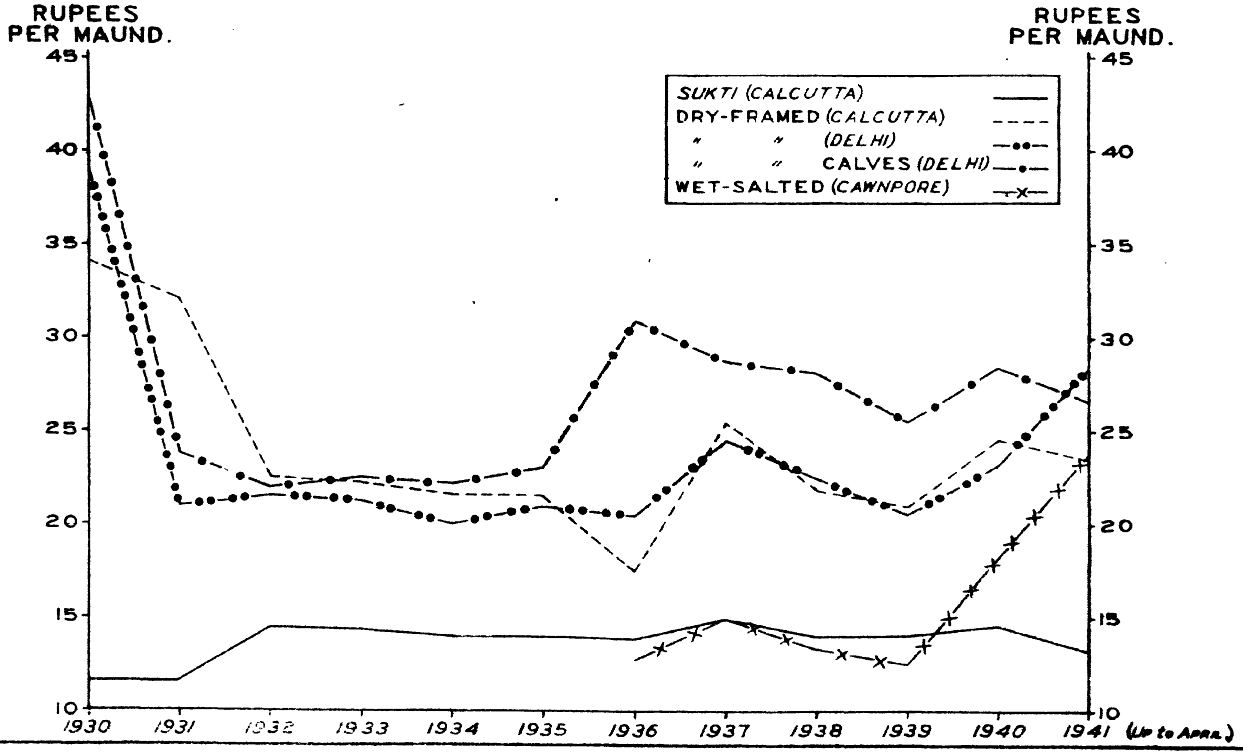
Trend of kip prices.

(Per maund).

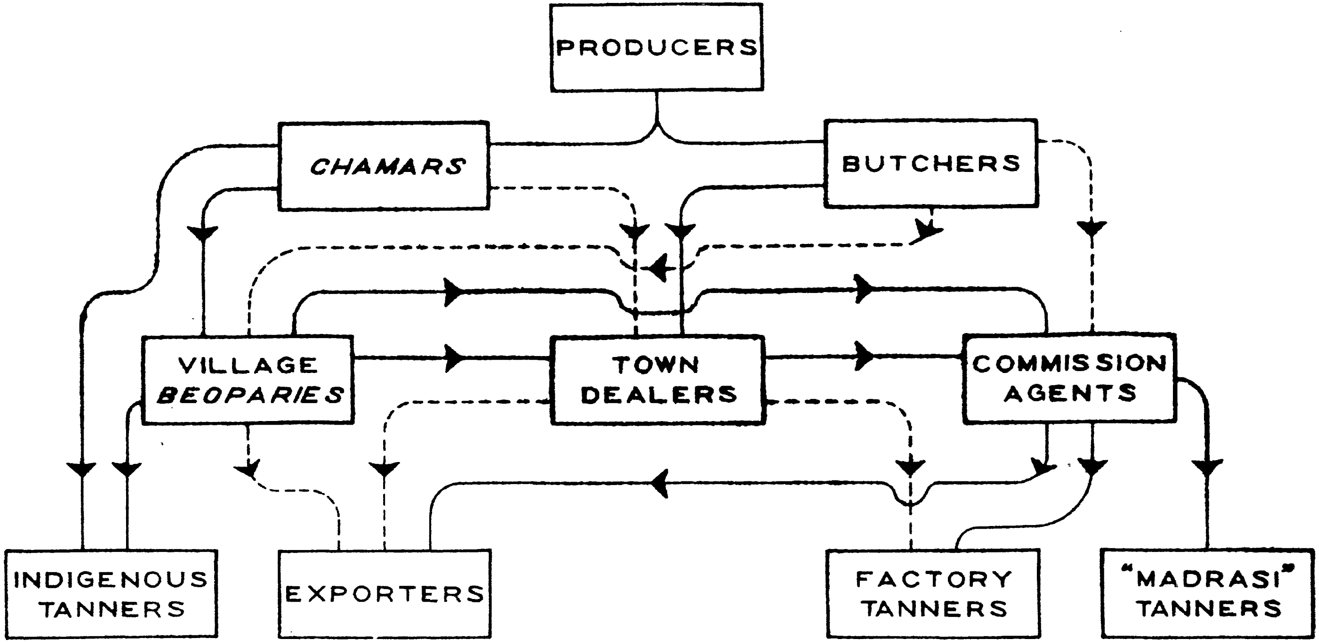
Year.	Dry-framed.		Wet-salted.		Dry-salted.	
	Calcutta.	Delhi.	Cawnpore.	Bombay.	Calcutta.	Dacca.
	Rs. A.	Rs. A.	Rs. A.	Rs. A.	Rs. A.	Rs. A.
1930 ..	45 4	40 0	..	..	22 14	33 6
1931 ..	31 14	30 0	23 2	..	16 7	19 4
1932 ..	29 0	30 0	13 15	12 4	12 14	12 13
1933 ..	27 0	32 8	12 10	12 4	15 7	12 13
1934 ..	23 6	32 0	12 15	13 7	15 15	14 1
1935 .	32 10	29 0	21 2	12 13	16 7	26 8
1936 .	36 11	37 8	25 10	14 2	22 4	26 15
1937 ..	40 4	38 0	15 1	12 14	23 0	18 8
1938 ..	34 12	29 6	14 9	11 9	18 8	20 10
1939 ..	34 5	32 1	18 9	12 14	20 9	23 15
1940 ..	40 0	45 4	18 11	18 0	23 15	26 8
1941 (up to April).	40 0	50 0	25 13	18 0	27 11	26 8

The figures in the above table are represented graphically in the diagram facing page 121. From this it will be seen that there has

TREND OF BUFF HIDE PRICES AT IMPORTANT MARKETS.



CHANNELS OF ASSEMBLING HIDES FOR MEETING THE REQUIREMENTS OF BUYERS.



(LESS IMPORTANT CHANNELS ARE MARKED THUS -----)

been a considerable and abrupt fall in prices between 1930 and 1932 for almost all the types of kips.

The low prices continued up to 1934 in the case of all types and markets, except the dry-framed goods at *Delhi* which showed some improvement during this period. Between 1934 and 1936 almost all the types showed marked improvement except the wet-salted kips at *Bombay*. Thereafter there was again a general decrease up to 1938. But from that year prices have steadily increased. This increase has been due to a general rise in prices and particularly to the additional requirement of hides (leather) for war purposes by the government. The difficulty of getting imported leather for uppers from the United Kingdom, the Continent and America has also created an additional demand for Indian kips for local tanning and finishing. Generally speaking, the 1941 prices have nearly come back to the level which existed before the commencement of the depression of 1929-30 and the indications are that hide prices would go up further if the war continues.

(*b*) *Buff hides.*—Prices at important markets for the different types of buff hides are given in the table below :—

Trend of buff hide prices at important markets.

(Per maund).

Year.	*Sukti.*	Dry-framed.		Dry-framed calves.	Wet-salted.
	Calcutta.	Calcutta.	Delhi.	Delhi.	Cawnpore.
	Rs. A.	Rs. A.	Rs. A.	Rs. A.	Rs. A.
1930	11 8	34 0	39 0	43 0	..
1931	11 8	32 0	21 0	24 0	..
1932	14 10	22 8	21 8	22 0	..
1933	14 6	22 4	21 4	22 8	..
1934	14 1	22 0	20 0	22 4	..
1935	14 1	22 0	21 0	23 0	..
1936	13 14	18 10	20 8	31 0	12 13
1937	15 0	25 9	24 10	28 12	15 0
1938	14 0	21 14	22 7	23 0	15 6
1939	13 14	21 0	20 10	25 9	12 6
1940 . ..	14 6	24 7	23 5	28 8	18 3
1941 (up to April).	13 5	23 9	28 5	26 8	23 15

The figures are represented graphically in the diagram facing page 122. The remarks applicable to the trend of kip prices generally hold good for buff hide prices also, but it will be seen that at the end of April 1941 they have not regained the 1929-30 position so well, as have the kip prices. One of the reasons for this is that there is not much demand for buff hides from the South Indian tanners for the making of dressed hides for export. Therefore, the benefit of increased demand for dressed hides due to War, has accrued mostly to the trade in kips and their prices have consequently showed a better rise. The wet-salted buff hides at *Cawnpore* market have showed the best rise of all, mainly due to the increased demand for heavy leather for War use.

G.—Note on prices at the beginning of the present War compared with those prevailing at the commencement of the last Great War (1914).

In the above connection attention is invited to table on page 121. It will be seen that in 1913-14, that is, in the year preceding the 1914 war, hide prices were more than double of the prices in 1937-38, the year preceding the present war. This position is rather significant, since leather goods form important war equipment. Comparative information is not available on other items of the cost of manufacture of leather goods, but the low price of raw hides which covers a fair proportion of the cost of the manufactured articles, indicates that the cost to the government in this direction will be considerably less in this than in the 1914 war.

H.—Note on price intelligence and suggestions for setting up a proper service.

Modern trade conditions require that producers, dealers and manufacturers should be well aware of reliable information of stocks, arrivals and prices of a commodity at important markets. If the trade in the commodity is of international significance, foreign market conditions should also be periodically reviewed. Unfortunately, in the case of the Indian hide trade, a proper price and market intelligence service has yet to be developed. Its absence is, however, felt by the trade and in order to fill up the gap to some extent, all important buyers and sellers keep in touch with other markets, as a part of their office routine. A private service has, however, its limitations and often there is no check on the accuracy of the information received or sent out. Cases of receipt of bogus information on prices or market tendencies are not uncommon even in the hide trade and, due to these, very often producers and small merchants have to suffer.

Some information on hide prices and arrivals at three or four markets appears periodically in the press. As far as is known, the following journals and dailies publish certain information for the benefit of their readers.

(1) " The Karachi Chamber of Commerce Bulletin " .. Weekly.
(2) " Calcutta Prices Current " by the Bengal Chamber of Commerce .. . . Weekly.

(3) "The Indian Trade Journal" by the Director-General of Commercial Intelligence and Statistics. Calcutta .. .. Weekly.

(4) "Capital", Calcutta .. .. Weekly.

(5) "The Statesman" (Calcutta), "Civil and Military Gazette" (Lahore), "Tribune" (Lahore). "Ahsan" (Lahore, Urdu), etc. .. .. Daily.

The remark "daily" against the papers mentioned above should not indicate that hide prices are published daily. Actually the daily papers deal with the subject generally once a month and that also not with any regularity. For instance, during 1940, 'the Statesman' published the hide prices at *Cawnpore* market on 12 occasions only on the following dates.

1940.—7th January; 20th February; 25th March; 30th April; 20th May; 18th June; 15th July; 12th August; 29th September; 6th and 14th October; 25th November and December—*Nil*.

The method of publication also differs from journal to journal but typical bulletins published by the 'Statesman', *Calcutta*, are reproduced below :—

"CAWNPORE MARKET.

(FROM OUR CORRESPONDENT).

Cawnpore, January 6 (1940).

Wet-salted cow hides superior Rs. 110 to Rs. 115 per score. Inferior Selection Rs. 90 to Rs. 95 per score. Wet-salted buffalo-calf hides 6 lb. per rupee. Dry arsenicated framed cow hides Rs. 44 to Rs. 48 per maund. Goat skins Rs. 110 to Rs. 115 per 100. Sheep Rs. 60 to Rs. 70 per 100."

"CAWNPORE HIDE AND SKIN MARKET.

(FROM OUR CORRESPONDENT).

Cawnpore, October 13 (1940).

The Cawnpore hide market ruled strong last week. About 10,000 pieces of wet-salted hides were sold during the week. The local tanners' demand for the Superior heavy and Superior medium-weight selections was very strong. The closing rates were : Superior heavy—Rs. 160 to Rs. 165 per score and the Superior medium-weight—Rs. 120 to Rs. 130 per score. Prices of Inferior Selections fluctuated between Rs. 50 and Rs. 60 per score.

Wet-salted buffalo hides ruled very strong. Arrivals during the week reached the season's peak figure of about 15,000 pieces. Demand was very heavy. The following were the closing rates : Superior Selections—3 to 3½ lb. per rupee and the Inferior Selections 4 to 4½ lb. per rupee. The skins market ruled dull and listless. Goat skins were quoted Rs. 50 to Rs. 60 per 100 skins. Some speculative sales were reported. The closing rates of sheep skins were Rs. 30 to Rs. 40 per 100 skins."

The Central Agricultural Marketing Department, *Delhi*, also circulates to all the important tanners and shippers a weekly summary of the progress of the hide grading stations and in this, the prevailing prices on the basis of AGMARK grades are also given.

In view of the present unsatisfactory arrangements for disseminating prices and market intelligence to the members of the trade, it is recommended that a proper service should be established to fill in this important gap. It is considered that if daily prices for all the important types of cures according to the grades and weights (AGMARK, commercial classifications and Hamburg classification), at the important markets of *Karachi*, *Delhi*, *Cawnpore* and *Calcutta*, are collected and issued to the press in a bulletin form, considerable service would be rendered to the trade. Arrivals of hides at the markets as well as an indication of the tendency at each market should also be included in the bulletin. The London market fluctuations in the price of " East India tanned kips " should also be taken into account, as they reflect upon the prices of raw hides in India. The collection of information, its scrutiny and dissemination can best be done by a central organisation, such as the Tanners' Federation of India at *Cawnpore*, in collaboration with the shippers' associations at *Karachi* and *Calcutta*. The proposal is commended to the above trade bodies for their consideration. They should also endeavour to see that the current information is passed on to smaller assembling markets so that producers may benefit by the improvement in prices, if and when it occurs. The District Boards and others who manage and control the periodical markets should arrange to obtain this information and display and disseminate for the guidance of the sellers such portions from it as might be advised by the Provincial Marketing Officer. The selected information might be put on notice boards, black boards or announced by beat of drum.

- -

INTER-CHAPTER FOUR.

The prices of raw hides depend, in addition to supply and demand positions, upon a large number of factors, *viz.*, type, quality, size, weight, cure, season of production, district of origin, conditions in overseas markets, etc. There is no standardised system of quoting prices and in the early stages of marketing, buyers usually make their offers per piece or per lot after examining the pelts. At the large assembling centres, the basis of quotation varies from tract to tract and prices may be quoted per standard or local maund, per hide, per score, annas per lb., pounds per rupee, etc., etc. These diversities often make the comparison of prices difficult at different markets even for the same type of goods.

On account of their superior quality, slaughtered hides sell at almost double the price of fallen stock. As the outturn of leather is proportional to the hide substance in the hide, prices vary a great deal according to cure or the proportion of moisture left in the cured hide. The labour charges incurred and the salt used in curing also influence the price per maund. For example, at the *Calcutta* market at one time, raw kips fetched Rs. 6-7-0 per maund, the wet-salted Rs. 9-14-0, the dry-salted Rs. 15-13-0 and the dry-framed Rs. 26-2-0 per maund.

Price also depends on the thickness or weight per square foot of the hide in its raw condition. The influence of weight on the prices of kips and buff hides is, however, quite different. The lighter the kip, the higher is the price because in this case the finished leather is sold per square foot. In case of buff hides, heavier pelts fetch more because they produce stouter leather which is sold per lb. The price difference between lights and heavies in both cases ordinarily approximates to about Rs. 3 per maund.

Of all factors, quality, *i.e.*, the absence or presence of defects in the hide is of greatest importance in determining prices. A study of the prices of different grades of AGMARK hides shows that, compared with the best "A" quality hides, the "B", "C" and "Rejection" grades fetch about 88, 75 and 45 per cent respectively. This shows how important it is from both the buyer's and seller's points of view to properly grade and mark the hides before sale.

The size of the animals which varies in different parts of the country is reflected in the shape, dimension or the pattern of the hide. Accordingly, a regional distinction has developed which also influences the prices. Hides from the large and heavy cows and buffaloes of the north and the west sell at higher prices than those from the stunted animals of the east and the south.

The quality of hides and, consequently, their prices are also affected by the season of their production. From October to March, grazing is plentiful and the animals are in a better state of health than in the summer season. The quality and thickness of the hide substance consequently improves and winter hides sell at a premium over summer or monsoon ones. Besides, the trade demand also increases during that part of the year and kip prices in January are about 17 per cent above the annual average. The lowest limit is reached in June/July when they are 9 per cent below the average. In case of buff hides, similar variations are observed, but they are less pronounced. In January and July, prices rise and fall by 7 per cent respectively.

The prices paid by different classes of buyers, *viz.*, shippers, factory tanners, "*Madrasi* tanners", etc., are determined after taking into account the above factors. The various buyers, however, buy according to their own classifications and notions of quality standards, and there is a good deal of difference in the prices paid by each one of them. Shippers purchase in whole lots and determine the quality according to the " Hamburg classification ".

A study of the average declared export values of hides, mostly *suktis* and dry-frameds, sent out from India during the 60 years period ending 1939-40 shows great ups and downs in the prices. From 1880 to 1916-17, prices steadily rose from Rs. 23 to Rs. 60 per maund. In the next five years, they fell back to about Rs. 23, but again rose to Rs. 37 per maund in 1929-30. Thereafter, they fell again, the lowest limit being reached in 1935-36, when they approximated to Rs. 16-8-0 per maund. With the opening of hostilities in 1939, prices again steadied up. Long range data in respect of internal markets are not available but a study of the prices during the last ten years reveals tendencies similar to those described above.

Although modern trade conditions require that producers, dealers, manufacturers should always be in possession of reliable information on stocks, arrivals and prices of a commodity at important markets, both local and foreign, a proper price and market intelligence service has yet to be developed in the hide trade in India.

CHAPTER V.—ASSEMBLING AND DISTRIBUTION.

A.—General.

Assembling and distribution comprise the two most important phases in the marketing of agricultural commodities. The expenses incurred, the time involved, the risks hazarded and the profits made by the agencies connected with these two services largely determine the share which the producer receives out of the price paid by the buyer or consumer. In India the problem is of special importance owing to the small scale and much too scattered production of almost all agricultural produce. As a result, a comparatively large number of intermediaries between the producer and consumer become necessary, which tend to reduce the price received by the producer and to increase that paid by the consumer.

The problems of assembling and distribution which confront the hide trade are, in general, similar to those prevailing in the case of other agricultural commodities. The perishable nature of hides and the fact that due to religious scruples only a few communities deal in them, give the hide trade a special colour, not found in the case of some of the other goods. In the country-side, production takes place not only on a scattered and small scale but is also casual and irregular. Besides, the primary assemblers or producers (*chamars*) belong to the lowest strata of the society and are extremely poor. Their intelligence and ambition are limited and their financial condition prevents them from accumulating any stocks or from waiting for a better turn in the market.

The producers of slaughtered hides in urban areas (butchers) are slightly better placed. Production is not so casual in character and at each slaughterhouse are found the *beoparis* or dealers operating on behalf of larger commission agents, tanners or shippers. Thus the butchers at the slaughterhouses are to some extent in touch with the agents of the tanners or shippers. This places them in a better position and enables them to take advantage of the favourable turns in the market, as compared with the rural *chamars*. Although, in recent years, butchers have become more enlightened and educated, yet, as a class, they are rather conservative and slow to adopt progressive methods in their trade or business.

Due to the conditions described above, organised and large scale assembling and distribution of hides take place only at the important markets by merchants who possess foresight, business acumen and appropriate finance. But here also unfortunately, due to the lack of statutory grade standards, much waste occurs and general dissatisfaction prevails everywhere, particularly with the buyers. The subject has been discussed at length in a subsequent chapter—" Reorganisation of Hide Marketing ".

B.—Agencies engaged in the assembling and distribution of raw hides and their functions.

(1) GENERAL.

The main channels of assembling and distribution of raw hides in India are graphically illustrated in the diagram facing page 123. It also shows the system adopted by the four main buyers of hides, *viz.*, (*i*) the indigenous tanners, (*ii*) the exporters, (*iii*) the factory tanners, and (*iv*) the *Madrasi* tanners, for procuring their requirements. The assembling and distributing agencies generally engaged and their functions are briefly given in the table below :—

Assembling and distributing agencies and their general functions.

Agencies.		
Main groups.	Sub-groups.	General functions
1. Producers ..	(*i*) *Chamars*	To claim and preserve fallen hides and sell them to indigenous tanners, village *beoparis* and occasionally to commission agents. At times, they tan the hides, and even make leather goods for local use.
	(*ii*) Butchers	To flay and sell slaughtered hides to local town dealers and occasionally to commission agents at distant markets. At times to cure the hides also.
2. Assemblers and distributors.	(*iii*) Village *beoparis*.	To purchase outright raw or cured fallen hides from *chamars* and to sell them to town dealers, local indigenous tanners, commission agents, and occasionally to exporters. To cure the hides, either partially or fully.
	(*iv*) Town dealers.	To purchase outright the hides from village *beoparis* and others and send them in small consignments or wagon loads to agents at larger markets for sale on commission basis, or to the exporters and factory tanners. To cure the hides, as and when required.
	(*v*) Commission agents,	To receive hides on commission basis from the various agencies and to sell them, after sorting and if necessary, after curing to exporters, to factory and *Madrasi* tanners.

It will be observed that amongst the producers, there are two sub-groups, *viz.*, (*i*) the *chamars*, and (*ii*) the butchers. Amongst the assemblers and distributors, there are three, *viz.*, (*i*) the village *beoparis*, (*ii*) the town dealers, and (*iii*) the commission agents. Detailed descriptions of the functions of each are given below.

(2) CHAMARS.

The *chamars* generally belong to the lowest strata of the Hindu community but they play a very important part in the rural economy of the country. They are known by different names in the various tracts but their functions are generally common throughout. In

Northern India they are usually known as *chamars* but in the Southern parts, they are called by various names. For instance in *Gujarat* they are known as *mahars* and *khalpas,* in *Central Provinces* as *dhores* and in the *Hyderabad State* as *dheds.* Almost in every village, depending upon its size and population, one or more families of these people are found living. They are classed as village *kamins,* and one of the services which they render to the village residents is to remove and dispose of the carcasses of dead animals, be they horses, cows, buffaloes, goats or sheep. Through ancient custom, they have a free right to such pelts in most parts of India.

In many villages, the *chamar* also functions as a tanner and in that case he tans in the indigenous way his collection of hides. This class of *chamars* have also a free right to the fallen hides but they have to supply free to the cultivators periodically country shoes, certain plough gear such as thongs, blinkers, head stalls, etc. They also play the very important part of castrating the male calves—an operation never performed by the owner himself in India. For the services they render, in addition to hides, *chamars* are also given some grain at the time of harvest and cash gifts at the time of births, marriages, etc.

In certain Indian States, however, the free right to fallen hides is not conceded to the village *chamars.* For example, in the Feudatory States of *Central Provinces,* in the *Eastern States Agency* and the *Western India States,* the right of collection of hides of dead animals is generally auctioned to a contractor every year. Thus, the hides of the dead animals belong to the State but in most instances the money realised is paid to the local *gowshalla* or *pinjrapole* for its maintenance. The contractor gets the hides collected through village *chamars* and sells them to merchants, etc. In the case of some of the Mohammedan cattle owners of the *Punjab* also, it is said that they pay only the flaying charges to the *chamars* and sell the hides themselves.

As already stated, the production of fallen hides is very casual and irregular. Besides, the product is highly putrescent and cannot stand storage for any length of time unless properly preserved. Thus, after flaying, unless he is also a tanner, the *chamar* tries to dispose of his acquisition, with the least delay. He first of all tries to sell it in green condition if there is near at hand a village *beopari.* If this is not possible, he usually dries the hide and sells it to the village merchant *ex*-holding or carries it to a weekly *hat* or *shandy* and disposes of it there, at any price which it may fetch. In this way, the village *chamar* acts as the primary agency in the assembling as well as in the distribution of fallen hides.

In urban areas also, the dead animals are the property of the *chamars.* They remove them to a place outside the residential limits, and flay off the hide. At times, even the cost (a few annas) of transporting the carcass is borne by the owner of the dead animal. The urban *chamar* generally disposes of the green hide at the godown of a town dealer.

(3) BUTCHERS.

(*a*) *Rural areas.*—In larger villages an animal or two may be slaughtered daily, but in smaller ones the slaughtering is generally a weekly affair. At places the day may coincide with the weekly *hat* or *shandy*, there being a special demand for meat on such days. The butchers dispose of the hides then and there to the buyers who are generally the *beoparis* from the surrounding villages and who are invariably present at such periodical markets. In some cases, one of the butchers might play the *role* of a *beopari* and purchase the production of his co-professionals and take the hides to the nearest town market. It has been reported from the *Punjab* that certain rural butchers practise this as a side occupation and sometimes employ even paid servants for the collection of hides. Where the hide collection is done by the butchers, they possess curing yards also. Sometimes, they may not have to move out at all and may receive the supplies at their godowns, from other butchers of the surrounding villages.

During certain Muslim festivals such as Id-uz-zuha, the production of hides even in the villages increases considerably. The slaughtering is done by butchers, but if they are not available at hand, a member of the family does the job. Such hides are generally known as " Kurbani " hides and are sold away to the butchers or to the village *beopari*. In some cases the sale proceeds of the Kurbani hides are credited to the village mosque fund.

(*b*) *Urban areas.*—Butchers of the urban slaughterhouses find a ready market for their hides. In most cases local dealers or agents of tanneries purchase the green hides at the slaughterhouse itself. Often the hide is purchased by them on the back of the animal, *i.e.*, before it is flayed.

Butchers who slaughter several animals a day or contractors who supply beef to cantonment areas, invariably cure the hides at their own godowns and deal directly with a commission agent in an outside market.

(4) VILLAGE *beoparis*.

Amongst others, these generally belong to the Sheikh, Khoja or Qassai sections of the Muslim community and play an important role in the assembling as well as distribution of raw hides. A majority of hides produced in India passes through their hands. In rural areas, they buy both green and partially preserved hides from *chamars*, butchers and others. They also receive at their curing yards hides from their own and neighbouring villages. On the *hat* or *shandy* day, they visit the rural market for purchasing hides.

As distributors, they carry or send their collection to the nearest town dealer. They deal also with the commission merchants at the larger markets and occasionally supply the goods direct to exporters. At times, they may sell hides to the *chamar*-tanners also.

The *beoparis* generally possess a small curing and storing yard. They employ a man or two to help them in their collection work, as well as to look after the goods in store. At times, they despatch consignments in wagon-loads, but, generally, they send the goods in small lots.

(5) TOWN DEALERS.

Really speaking, there is little difference in the mode of business or functions between the town dealers and the village *beoparis,* except for the place of operation. At times, however, a village *beopari* may have a much larger turnover of business than the town dealer. When sufficient stocks have accumulated, the town dealers send the hides for sale to commission agents, at larger markets. They sometimes supply goods direct to exporters and tanneries, or act as their purchasing agents. They also sell the rejections from their stock to local tanners.

(6) COMMISSION AGENTS OR *Aratdars*.

These are important and well established hide merchants operating at larger markets. Apart from a much larger annual turnover, compared with the previously described agencies, there is a fundamental difference in their mode of business. While the former generally buy the hides outright and incur the risk of deterioration in quality or fluctuation in prices, the larger city merchants or *aratdars* do business mainly on commission basis. They, however, have to invest larger capital and at times, have to send money in advance to the village *beoparis* or town dealers. They possess extensive warehousing facilities, employ large staff, and their godowns serve as the final assembling and distributing centres for most of the hides. After a good deal of sorting, they offer their clients' goods to the various large scale buyers, *e.g.*, factory tanners, exporters, *Madrasi* tanners, and charge a commission on the completion of each sale transaction. Sometimes, they may purchase hides on their own account also and dispose of them to the usual buyers. It will thus be seen that these merchants act also as large scale distributors, who often execute outstation orders.

C.—Hides markets.

At some stage or other, all hides (except those retained in the villages for indigenous tanning or used raw) pass through "markets"—either weekly ones in the rural areas or the terminal ones at large cities.

(1) RURAL.

As already stated, a good proportion of the hides in rural areas is sold to the village *beoparis* and collectors by the *chamars* and butchers on their own premises. Some of the hides are also delivered by the producers at godowns of the village merchants and the tanning yards of the rural or indigenous tanners. The remainder of the hides is sold in weekly *hats* or *shandys.*

Invariably in all periodical markets, a place is allotted for the sale of hides. This generally comprises an open space, sometimes under the shade of some trees. Here the producers of hides from the neighbouring villages gather and the intending purchasers who may be village *beoparis,* agents of town dealers or the commission merchants buy up the stock. The *beoparis* or the collectors might also dispose of the inferior pelts from their collection to the local tanners at such markets.

The weekly *hats* or *shandys* are quite common throughout the country, but it is noticed that the practice of selling hides in such markets, is more prevalent in the South than in the North. In the latter zone, *i.e.,* the *North-West Frontier Province,* the *Punjab,* the *United Provinces, Bihar, Bengal* and *Assam,* sales at village merchants' godowns or at the premises of producers are more common. In the South, however, the number of raw hides assembled at big weekly *shandys* are sometimes as high as 300 to 400 pieces on a market day.

The rural markets are either owned by district boards or by *zamindars.* They generally charge a market fee from all people who assemble there for the sale of their goods. As a rule, the right of collecting the market fee is given on contract on an annual basis, but the contractor has to abide by the rates fixed by the owner. For the sake of convenience, fees are levied either per seller or on the basis of the means of transport (head-load, horse, camel, cart, etc.), in which one might have brought his goods. The latter gives an indication of the quantity which one has brought for disposal and the larger the quantity the greater the charge imposed. Those who bring on head-loads pay the least and the cart-man the highest. The rates differ considerably from market to market (see page 138).

(2) URBAN.

In towns and cities, the slaughterhouses themselves constitute the primary market places for slaughtered hides. Prospective buyers assemble every morning at the slaughterhouse and purchase the hides as they are flayed, either singly or in lots. At larger slaughterhouses, where a butcher may have slaughtered several animals, the hides are invariably sold in lots—small and large, good and bad, kips and buffs, all together. At places where the practice of selling the hide on the back of the animal before slaughter is prevalent, these pelts are straightaway carted to the buyer's godown.

The godowns of the hide merchants are not located in any specially constructed market-place answering to any particular plan or design. They are, however, usually all confined to a particular locality only. At places, the existence of a canal, railway goods yard or a tannery may influence the location of hide godowns.

At each important place it appears that the site originally chosen for locating the godown was outside the town or city, mainly for two reasons. Firstly, the sight and smell of raw hides is unsavoury and repugnant and secondly, because the hide merchants require large spaces for curing and storage, the necessary space could be had cheaply only in the outskirts. For similar reasons, the slaughterhouses also were placed outside city limits. But due to the expansion of the towns and cities, in most cases the hide markets and in some cases the slaughterhouses also, have now come within the limits of the town area proper.

The hide godowns are not always constructed according to a definite plan, but they generally show a sort of uniformity in design. A brief description appears on page 199.

D.—Methods of sale.

There are a few peculiarities in the methods adopted for the sale of hides under present conditions, and these are briefly described in this section.

(1) In villages.

When the hides are sold or purchased in the villages, it is done through direct negotiation. The buyer examines each piece and offers a price. The *chamar* is generally ignorant of current market rates and tendencies and in negotiating a bargain can, at the most, rely upon the price realised by him on some previous occasion. The purchaser naturally makes full use of the situation and invariably succeeds in securing the goods at rates considerably lower than the prices current in the market. This is particularly so when the deal is transacted on the premises of the *beopari*. At a weekly *hat* or *shandy* where several buyers and sellers may be present, the element of competition helps the seller to some extent in getting better prices.

(2) At slaughterhouses.

The systems adopted for selling the hides at the slaughterhouses differ to some extent from tract to tract. In the *Punjab* and *Delhi Province*, butchers collect the hides for the examination of buyers, when the latter present themselves at the slaughterhouses. After examination of the hides, the buyers whisper their bids for the lot one by one to the seller and it is sold to the highest bidder. The sale of hides on the back of the animals before slaughter is not common in the above area.

In the *United Provinces*, both the types of sales, *viz.*, before and after slaughter, are common. The former is effected by examining the animals at the butcher's *bara*, shortly before slaughter, and settling the price per hide. Whenever the above method is not followed, the hides are generally sold by auction at the slaughterhouses but the bids may not be given openly. At the *Tangra* (*Calcutta*) slaughterhouse, purchase of hides before slaughter is most common, but the prices may be fixed at the slaughterhouse itself, soon before killing the animal in *sotto voce*.

In the *Central Provinces* and *Madras Province*, the butchers are given loans (generally without interest) by the hide merchants for the purchase of animals, on the condition that all hides are sold to them at a price settled beforehand or at the current market rate. In the *Mysore* and *Hyderabad States*, and at the city slaughterhouses of *Madras* and *Coimbatore*, *ante mortem* sales are common, but the prices are settled long before slaughter. At the *Bandra* (*Bombay*) slaughterhouse the tannery owners enter into contract with the butchers (sometimes through a middleman) once in 3 months, to purchase all hides at a fixed rate.

(3) AT LARGER MARKETS.

The village *beoparis* and town dealers generally consign their stock only to those commission agents, with whom they have business relations of long standing. It was observed during the present enquiry that even some of the old established district merchants possessed the names and addresses of only a few commission agents at one or two markets. Sometimes the commission agents themselves appoint the town dealers as their hide purchasing agents. They indicate to them the price and quality of hides and also provide the necessary finance. Generally a commission of 4 annas per hide is allowed to such agents.

The commission merchants receive hides from the dealers in the districts once or twice a month as the case may be. On arrival, the hides are examined and up to 75 per cent of their *andaz* (approximate) value is remitted to the supplier. The balance is sent after sales, after deducting the merchandising charges. In the *North-West Frontier Province*, the village *beoparis* often accompany their stock and stay with the commission agents for about a week or so.

In case the commission agent has some outstation orders on hand, he may do the necessary sorting and make up the required consignment himself, and despatch the same at the risk of the final buyer. For sales *ex*-godowns, the buyers or their agents examine the hides, settle the price (per piece or on weight basis) and clear away the goods. When several buyers are present at the commission agent's godown to purchase a common lot, an open auction may take place or the bid may be given under cover.

Sometimes, when they cannot be sold, the "rejections" are sent back to the areas of production in the districts, for re-sale to *chamars*. It is obvious that the absence of trading on the basis of standard grades in the preliminary stages of marketing is responsible for this wasteful practice.

That the system of marketing as described above is not at all conducive to a healthy growth of the hide industry, does not need further elucidation. The practice of selling hides on the back of the animal itself is sufficient to foil all efforts towards effecting improvement in the flaying and better take-off, as the interest of the butcher ceases entirely once the hide is sold. By not dealing on the basis of standard grades, almost all the agencies remain, so to say, at the mercy of the commission agents, in the matter of sorting, grading and selling of hides. The latter in turn have to depend exclusively on the requirements and buying limits of the exporters and tanners. This last named agency also works at a handicap and cannot send open offers, in the absence of an assurance regarding quality. There is, therefore, no wonder that the hide trade has remained disorganised, in spite of its importance, both in times of peace and war. The solution lies in introducing effectively a system of grading and marking the hides in large quantities by an independent and reliable agency according to pre-determined and known specifications. It is hoped that by adopting the system outlined in the chapter on Reorganisation of Hide Marketing, matters would improve to a great extent, at least in the larger markets.

E.—Merchandising charges.

(1) IN RURAL MARKETS.

The producers of hides (*chamars* and butchers) pay very little by way of market charges. In case they take the hides to a weekly *hat* or *shandy* they have to pay from 3 pies to an anna to the market lessee. In the rural markets in the *Bombay Province* the *beoparis* are generally charged a rupee per cart-load of hides (roughly 20 maunds), as market charges. If the cart contains only half or less than half the above weight, only 8 annas are charged. For a head-load, that is, generally 2 hides, an anna is the usual rate. In the *Madras Province* the market charge varies between 6 pies to an anna per hide. Besides the above charge, no other expenditure is incurred by the producers. The buyers have not to spend anything in the rural markets.

(2) IN LARGE ASSEMBLING AND DISTRIBUTING MARKETS.

On an average, merchandising charges, which a seller of hides has to pay at the terminal markets, amount from 6 to 10 per cent of the value of the goods. There is, however, no uniformity in the basis of levying the charges. They may be based per piece, per score, on weight or on an *ad valorem* basis. In the same market the charges differ from merchant to merchant and accordingly to the type of goods, *e.g.*, kip or buff hides. Sometimes, the charges vary with each transaction.

The merchandising charges may be divided into three categories, *viz.*, (*a*) charges incurred by the country dealers in consigning the goods to the commission agents, (*b*) charges of the commission agents recovered from the sellers, for clearing the goods and selling them off, and (*c*) charges paid by final buyers to the commission agents.

(*a*) *Charges incurred by country dealers in consigning goods to commission agents.*—These vary from place to place according to local conditions, customs, means of communication, etc. The following examples collected during the survey in the *United Provinces*, *Bengal* and *Mysore State*, illustrate the point.

Charges incurred by village beoparis *or town dealers in despatching hides to other markets.*

Items.	Per bundle of 10 wet-salted or 25 dry-salted hides weighing 3 to 5 maunds. Agra.	Per bundle of 10 dry-salted hides weighing 1¼ to 1½ maunds.		Per bundle of 2½ maunds.
		Serajganj.	Chittagong.	Bangalore.
	As. P.	As. P.	As. P.	As. P.
1. Rope for binding ..	1 0	1 0	1 0	3 0
2. Labour for packing and loading into carts.	2 6	..	..	..
3. Cartage to Railway Station	2 6	1 0	2 0	2 0
4. Unloading, weighing and loading at Railway Station.	0 9	0 6	1 0	0 6
5. Station expenses.. ..	1 3	2 0	2 0	1 0
Total ..	8 0	4 6	6 0	6 6

(b) Charges of commission agents recovered from sellers for clearing the goods and selling them off.—These comprise the following main items, (*i*) clearance and cartage charges, (*ii*) octroi or terminal tax, (*iii*) commission, (*iv*) charity, (*v*) rebates, (*vi*) allowances, and (*vii*) miscellaneous charges. These are discussed here in brief.

(*i*) *Clearance and cartage.*—This is incurred by the commission agents on behalf of their clients in taking deliveries and transporting the goods to their warehouses. A small amount, generally an anna per bundle, is paid to the clerks, watchmen, etc., at the goods sheds, for prompt delivery and careful custody. The other item is cartage to godown including loading and unloading, which varies between 1 anna to 3 annas or more per bundle, depending upon the size of the bundle and the distance of the godown from the railway station.

(*ii*) *Octroi, etc.*—In most places, a municipal toll, terminal tax or octroi is levied on the goods arriving there. As in the case of other commodities, the rates charged on raw hides vary from market to market and their range of variation is from 1 anna to 8 annas per maund. In some cases, different rates are fixed for wet and dry hides. For instance, at *Kasur* and *Jullunder* in the *Punjab*, 6 pies and 1 anna 3 pies per maund are charged respectively on wet hides whereas the corresponding rates for dry hides at the two places are 1 anna 6 pies and 2 annas per maund.

(*iii*) *Commission.*—This comprises one of the main items of expenditure and varies widely from market to market. The charge covers all the services which the commission agent renders towards sale of goods. The data in the following table illustrate the point. The commission is generally payable only by the seller of the hides.

Commission charged by the agents on sale of hides.

Name of market and type of hide.	Rate. Rs. A. P.	Per.
Peshawar—		
Kips	2 8 0 to 3 8 0	20 hides.
Buff hides	5 0 0	
Multan	4 11 0	Rs. 100.
Lahore—		
Kips	5 0 0	20 hides.
Buff hides	1 0 0	Maund.
Amritsar—		
Kips	5 0 0	20 hides.
Buff hides	1 4 0	Maund.
Kasur	1 0 0	Maund.
Delhi	3 2 0	Rs. 100.
Cawnpore	5 0 0	20 hides.
Calcutta	4 8 0	20 hides.
Bombay	2 8 0	Rs. 100.
Madras	2 8 0	Rs. 100.
Hyderabad (Dn.)	2 8 0	Rs. 100.

It will be observed that the basis of charge is different in different markets. In the *Punjab* markets separate rates are levied for kips and buff hides. The latter are charged on the weight and the former on number. At other places, a flat rate on the quantity or value is levied.

(*iv*) *Charity.*—Under this item, a charge is levied which is used for the maintenance of temples and *dharamshalas*, etc., in the case of Hindu merchants (which are very few in the hide trade) and mosque,s *serais*, schools, etc., in the case of Muslim merchants. The deduction is generally made on an *ad valorem* basis and varies between 6 pies to 2 annas per Rs. 100.

(*v*) *Rebate.*—The rebate includes the sum which the commission agent may allow the buyer in lieu of the latter paying the amount due to him within a certain specified period. In most of the North Indian markets a rebate of 10 annas per Rs. 100 is allowed to the buyer. The time limit for this rebate may, however, vary from a week to a month in the different markets.

(*vi*) *Allowance.*—According to the local market custom, an allowance from ½ to 2 seers per maund is allowed to the buyers to cover dirt and other extraneous matter which might be adhering to the hides. This is known as *choot* in the *Punjab* and *kattoti* in the *United Provinces*. In the markets in the former province, the rate is ½ seer to 1 seer per maund. A larger deduction than the generally prescribed limit may also be made, if the hides are very badly prepared, and contain abnormal quantities of extraneous matter.

(*vii*) *Miscellaneous charges.*—Under this item are included all other charges to cover *munshiyana*, *hisabana*, postage, telegraph expenses, storage, etc. These may be charged on the number, maundage, or value basis. Compared with the commission, this is usually a small charge. For example at *Lahore* in the case of kips, all the above charges are covered by 6 annas per 20 hides. At *Kasur* less than 3 annas per maund are charged against this item and at *Multan*, on an *ad valorem* basis, it is 5 annas per Rs. 100.

(*c*) *Charges paid by final buyers.*—In case the raw hides are purchased locally at a market, the expenses incurred by the sellers are small and consist of only the cost of turning and showing the goods to the buyers. This does not generally exceed 2 annas per 100 hides. In case the hides have to be sent to an outside station, generally the same expenditure as detailed under "charges incurred by country dealers in consigning goods to commission agents" is charged from buyers, of course, with due regard to increased transport expenses under city conditions.

The following two examples give particulars of expenses incurred on consignments for export :—

Example I.—*Charges incurred on the export of* 600 *dry-salted kips in* 4 *bales, weighing approximately* 1 *ton and valued at Rs.* 1,500 *ex-godown, Calcutta to London,* (*before September* 1939).

		Rs.	A.	P.	Percentage to total.
1.	Labour and cartage from godown to Press ..	3	8	0	2·6
2.	Rope, hoops, and naphthalene for preservation ..	2	8	0	1·9
3.	Hide Selectors' labour	3	0	0	2·3
4.	Pressing charges	4	0	0	3·0
5.	Cartage to the docks	3	0	0	2·3
6.	Port Commissioner's charges	1	0	0	0·8
7.	Shipping freight	40	0	0	30·1
8.	Shipping documents expenses	4	0	0	3·0
9.	Survey fees	4	0	0	3·0
10.	Chamber of Commerce charges	4	0	0	3·0
11.	Insurance	3	12	0	2·8
12.	Clearance and other charges, in London	60	0	0	45·2
	Total ..	132	12	0	(100)

or 8·9 per cent of the value.

Example II.—*Charges incurred on the export of* 5 *bales of dry buff hides weighing* 7,000 *lb. valued at Rs.* 2,550 *from Lahore to Chios* (*Greece*) via *Karachi in March* 1937.

		Rs.	A.	P.	Percentage to total cost.
1.	Packing material	8	2	0	2·0
2.	Labour and arsenicating charges	2	8	0	0·6
3.	Pressing charges at Lahore	12	8	0	3·0
4.	Consigning charges at Lahore	3	12	0	0·9
5.	Railway freight from Lahore to Karachi	93	15	0	22·7
6.	Octroi at Karachi	8	5	0	2·0
7.	Measurement fees	0	8	0	0·1
8.	Loading and unloading at Karachi	3	2	0	0·8
9.	Wharfage and lighterage	11	7	0	2·8
10.	Sea freight	225	0	0	54·4
11.	Bill of lading	1	8	0	0·4
12.	Consular fees	3	12	0	0·9
13.	Health certificate	6	0	0	1·4
14.	Certificate of origin	3	0	0	0·7
15.	Insurance	23	6	0	5·7
16.	Commission of Karachi agent	5	0	0	1·2
17.	Miscellaneous	1	8	0	0·4
	Total ..	413	5	0	(100)

or 16·2 per cent of the value

F.—Finance of assembling and distribution.

(1) PRODUCERS.

Chamars, who are producers of fallen hides generally get them free and do not, therefore, ordinarily need any finance. In areas where they are required to pay to the owner of the animal a proportion of the value of the hide, they do so after the pelt has been actually sold. This class of people are, however, very poor and are always in need of money. The rural collectors, particularly in parts of Southern India, give them small advances up to the value of a piece or two, on the understanding that they would sell their production to the creditor.

The production of slaughtered hides is a by-product of the meat industry and consequently butchers generally depend upon their own resources for the purchase of the slaughter stock. But in almost all the areas they are also known to take advances from the hide merchants on the promise that they would sell their production to their creditors. The system of selling hides on the back of the animals a day or two before slaughter, which is common at most of the larger slaughterhouses, in a way enables the butchers to get some financial assistance from the purchasers of hides.

(2) MERCHANTS.

The village *beoparis* or town dealers generally possess their own capital. Sometimes, they borrow money from the local *sahukars* and in some instances they may take advances from the wholesale merchants with whom they may have long established business relations. The latter do not ordinarily charge any interest on such advances but make allowance for that in the prices. In case the *beoparis* are asked to supply hides on commission basis, the town or district merchants provide them with the necessary funds.

The wholesale merchants and commission agents depend upon their own resources or may receive help from a bank, tanner or exporter. They have to invest large sums of money in their business which sometimes exceed several lakhs of rupees.

The buyers clear up their accounts with the commission agents within specified limits of time, which have been prescribed in the various markets. In regard to out-station sales, the commission agents tender the railway receipt to their bank and draw cash immediately. The bank collects the value before delivering the receipt to the buyer. When the goods are transported by road, the realisation is often made by *hundis* or demand drafts. It has been reported from *Bombay* that where banking facilities do not exist, prices are also realised by merchants from outside tanners per V. P. P. The goods are consigned by rail and the railway receipt is despatched to the tanner per V. P. P.

(3) EXPORT TRADE.

The foreign importers have their own purchase offices in India and the necessary finances are provided by the principals abroad. In case the foreign buyers purchase through the several firms of exporters in the country, the following procedure is adopted. When the importer experiences a demand for a particular type of hides, he sends his requisition to the exporter together with a price limit and, if it suits the latter, he sends his approval by cablegram. The foreign buyer then instructs his bankers in India to pay to the exporter a sum of money nearly equivalent to the value of goods ordered, on receipt of *shipping documents by the latter.* The exporter receives *full payment for goods exported on presenting the bill of lading to the buyer's bankers.*

When the exporter belongs to an up-country market, he sends the railway receipt to his shipping agents through a local bank which advances about 75 per cent of the value of goods as shown in the invoice. The bill of lading in this case is received by the local bank which subsequently presents these documents to the bank concerned. After deducting the sum advanced, the local bank pays the balance to the exporter.

G.—Note on the position in Burma.

The position in Burma is not very different from that in India. There are primary assemblers of country hides, both from district slaughterhouses and the cultivators. Most of these assemblers have regular business connections with district depots or agencies of the exporting firms. In some cases they obtain from the firms commission at the rate of Rs. 2-8-0 per 100 viss for wet and Rs. 5 per 100 viss for dry hides. They are then known as the firm's brokers and are debarred from having any business dealings with any other firm.

The system of purchase by the firms of exporters whose offices are in Rangoon is as follows. They notify to their district agency the kind and qualities of hides required by them together with the price limit. The agency distributes the order to sub-agencies and brokers. The former get advances from the firm while the latter are only notified of the quantity and the price at which the agency will buy from them. The brokers buy at such prices as they are able, the difference between the price paid and that received from the agency, together with brokerage, representing their trading profit. The broker has to bear all expenses from the village to his godown and from there the agency arranges for its transport.

The local tanners also have a considerable share in the assembling of raw hides. Their activities are concentrated round about Rangoon and Mandalay but they also have representatives and buying agents in district towns. They are tanners primarily, but some of them have developed their purchasing activities in raw hides to such an extent that these throw their tannery business into the background. These tanner-merchants, therefore, often act as primary assemblers for the exporting firms especially in the case of town slaughtered hides. At the same time, they buy the low grade stock from the exporters for tanning purposes.

INTER-CHAPTER FIVE.

The problems of assembling and distribution which confront the hide trade are, in general, similar to those prevailing in the case of other agricultural commodities. The perishable nature of hides and the religious scruples of people in regard to their handling, etc., however, give the hide trade a special colour. Production in the country-side is not only scattered and on a small scale, but is also casual and irregular. The extreme poverty and backward condition of the *chamars* prevent them from accumulating any stocks. Thus the assembling of hides have to be done on a widespread but piecemeal basis, much to the disadvantage of the producers. Conditions are somewhat better as far as urban slaughtered stock is concerned.

The main agencies engaged in the trade are the producers both *chamars* and butchers, the village *beoparis*, the town dealers and commission agents. *Chamars* and butchers sell for cash their collection to indigenous tanners, village *beoparis*, town dealers and, occasionally, to commission agents. Village *beoparis* purchase hides outright from *chamars* and rural butchers and sell them to town dealers or commission agents. In the villages they distribute hides to local tanners and, at times, work on commission for purchasing hides on behalf of wholesale merchants. Town dealers buy from village *beoparis* and others and sell through commission agents in wholesale markets. They also sell direct to exporters and factory tanners. Commission agents grade and assort the hides (but do not mark them) received from town dealers and others and sell them to exporters, factory and *Madrasi* tanners. At times they purchase hides on their own account and dispose of them to the usual buyers. They invest large capital, have ample warehousing facilities, possess business acumen and foresight and act as large scale distributors.

There are no separate markets for the sale of hides. In rural areas, most of them are sold by producers *ex-holding* or delivered at the godowns of the village *beoparis* and the tanning yards of the rural tanners. The remainder are sold in weekly *hats* and *shandys* where a corner of the market place is generally reserved for the sale and purchase of hides and leather goods. For slaughtered hides, the urban slaughterhouses themselves constitute the market place. Where the system of purchasing on the back of the animal is in vogue, the buyers arrange to take delivery of the hides at the slaughterhouses.

In rural areas, sales are effected through direct negotiation. The *chamars* are generally ignorant of current market rates and tendencies and purchasers take full advantage of this. At the slaughterhouses, the butchers collect the hides for the examination of buyers who whisper to the former, one by one, their bids, and the lot is sold to the highest bidder. In many places, hides are sold on the back of the animal before slaughter. The prices are settled in advance either in *sotto voce* or by bidding aloud. In some parts, particularly in the south, butchers take advances from merchants on condition that they would sell the hides to the latter at some pre-settled rates. In larger markets, it is usual for the commission agents to sort the goods of their clients and put them to auction in lots. The bids may be either secret or open and at times, the sales may be effected through direct negotiation.

Producers have to spend very little by way of market charges. In case they take the hides to a weekly market they have to pay from 3 pies to an anna to the market lessee. The village *beoparis,* while selling in rural markets, have also to pay the usual market fee.

In the larger markets the merchandising charges amount from 6 to 10 per cent on the value of goods. There is, however, no uniformity in the basis of levying the charges. They may be based on per piece, per score, weight or on an *ad valorem* basis. In the same market the charges differ from merchant to merchant and according to the type of goods, *i.e.*, according as they are kip or buff hides. Sometimes, the charges vary with each transaction. The most important charge is the commission. It varies between Rs. 2-8-0 and Rs. 5 per score in different markets. Other items are clearing and cartage charges, municipal charges, charity, rebates, allowances and other miscellaneous charges.

Chamars do not ordinarily need any finance as they receive the pelts generally free of any cost. In the South, the village *beoparis* are known to give them small loans with a view to securing their collection at slightly lower rates. Butchers generally work with their own capital but at the same time they take loans from merchants for the purchase of slaughter-stock.

The village *beoparis,* town dealers and wholesale merchants, all work with their own resources. In times of need, however, the village *beoparis* may borrow from *sahukars* or from the hide merchant. In the latter case, no interest is charged openly but adjustment is made in the price. Wholesale merchants, on the other hand, draw on banks against the security of stocks. In case of out station sales, realisations are made through banks or by demand drafts. The financing of the export trade is mainly done by the foreign buyers.

Burma.—Conditions in Burma are similar to those in India. The exporters as well as the local tanners purchase from rural areas through collectors. The latter generally work on their own, but, at times, they collect hides on commission basis also. In that case, they get Rs. 2-8-0 for wet and Rs. 5 per 100 viss for dry hides from their principals. The tanner merchants also sell to, and purchase from, exporters.

CHAPTER VI.—QUALITY AND GRADING.

The quality of a hide depends upon a large number of factors and its correct determination requires a great deal of experience and skill. The breed, sex and age of the animal, the tract to which it belonged, the manner in which it had been maintained, the diseases it had suffered from, the part of the year and its condition at the time of death or slaughter and the way the hide had been flayed, cured, stored, transported and handled, all go to make the quality of the hide as well as that of the leather made from it. The main factors which the trade generally takes into account at the time of determining the quality are briefly described below.

A.—Quality factors.

While making purchases, buyers look to (*a*) the size and pattern, (*b*) the substance, thickness and weight, (*c*) the grain, (*d*) the method of curing, (*e*) the biological defects, and (*f*) the mechanical defects, on the hair and flesh sides of each hide. Larger, thicker, well-cured hides from comparatively young animals and free from blemishes are, as a rule, prized by the trade and the others relatively discounted.

(1) SIZE AND PATTERN.

Although large pieces have their special demand for the preparation of upholstery and harness leather, they are generally preferred by all because the losses in cutting, etc., when preparing manufactured articles are much less in their case, compared with smaller hides. A large hide should, however, not be confused with a loose textured, spready hide—a condition much disliked by the tanner. The regularity with which the hide is cut open, the position, direction and straightness of the cuts by which it is taken off from the carcass, comprise a good or bad pattern. Hides neatly cut at the edges with as little wastage as possible and in such a way that they will spread flat on a level ground, are termed as " well-trimmed ". The production of a good pattern hide is the result of experience and practice. A bad pattern or trim may not prevent its disposal but is certainly responsible for price discriminations, particularly at the time of low demand and large supplies.

(2) SUBSTANCE, THICKNESS AND WEIGHT.

These are some of the most important quality characteristics of a hide and determine its suitability for making various types of leather. Hides, whose fibres of the corium are tough and firmly interlaced and have a strong structure, are known as substantial or plump. A plump or stout hide is generally heavy but a heavy hide is not necessarily plump. For example, the hide of an old animal may have tough fibres and be heavy, yet it may not be plump and may produce only spongy leather.

(3) GRAIN.

Closely related to the above factors, and even more important, is the nature of the grain, which a hide possesses. In the production of all high grade leathers, the quality of the grain is the most important feature. In the process of liming when the hair is removed, the small projections and depressions, distinctive to and characteristic of the pelts of different animals, become visible and constitute what is known as the "grain pattern" of the hide. Good grain, *i.e.*, smooth, fine and flawless surface, without any scratches, wrinkles or goad marks, is of utmost importance in the evaluation of the quality of a hide. To a large extent the quality of leather depends upon the grain pattern of the raw material except in the case of the stuff used for soles and mechanical purposes. In the raw hide, the type and condition of the coat (hair) is an indication of the quality of the grain underneath.

Leather made from hides having "bad grain" has an imperfect and unattractive finish. Besides, if the leather is broken or weak at any point on the surface, it loses much of its utility. For this reason, hides otherwise good but defective in grain lose much of their value and go down considerably in their quality.

(4) METHOD OF CURING.

The methods whereby hides are temporarily preserved from putrefaction have already been described in Chapter II. The order of choice in which local tanners purchase the hides are (*i*) untreated or green, *i.e.*, fresh from slaughterhouse, (*ii*) wet-salted, (*iii*) dry-salted, (*iv*) dry-framed, and (*v*) unframed air-dried or *suklis*. This gradation is dependent upon the ease with which either of them can be tanned into leather. Shippers, on the other hand, place "dry-cured" first on account of the convenience in handling, packing and transport.

The quality of hides cured by either of the methods depends upon the proficiency and care with which the operation has been performed. With a view to increasing the weight, many a time hides are "loaded" with blood, mud or salt and some of the unnecessary appendages as tail, ears, etc., are left untrimmed. Loading is also practised for concealing the defects like scores, flay marks, warbles, etc. This practice brings down considerably the quality or selection of the hides put on the market. It also gives a bad name to the raw product of a particular part of the country and has been the cause of a gradual shifting of the foreign demand to other countries.

(5) MECHANICAL DEFECTS.

Yoke or gall marks, cuts, scars, etc., on hides which arise from bad flaying, branding, goading, accidents, etc., to animals, fall under mechanical defects. The effect of flay marks on quality has already been discussed in Chapter II and the other mechanical defects are briefly described below :—

(*a*) *Branding.*—The animals are branded with hot iron rods, either for the purpose of identification or as a remedy against sprain, lameness, colic, etc. The animals are often branded on the rump, the most valuable part of the hide, and this reduces its value considerably.

Branding, on the whole, seems to be on the decline and, if practised anywhere at all, it is prevalent to some extent in the south. In the north it is generally done on aged animals only. Recently (November, 1940) it was observed that out of over nine thousand bullocks assembled at the *Pushkar* fair (*Rajputana*) only 3 animals had minor brand marks on them. In a hide godown at *Bangalore*, out of 580 district hides examined, only 8 had brand marks. But in this latter case the branding extended throughout the length of the hides on either side of the spine—a typical method of branding in the south. It is said that at times owners deliberately reduce the value of the pelt through widespread branding, lest the village *chamar* should poison the animal for the sake of the hide.

In any case, the practice should be discouraged wherever it is prevalent, through propaganda. Increased facilities for veterinary aid may also help in eradicating the evil. Smaller marks placed on less valuable parts of the hide, *e.g.*, on cheek, or below the knees, would serve the purpose of identification.

(*b*) *Goad marks.*—These are restricted mainly to the hides of draft animals. Sharp pointed goads are used for driving the oxen and buffaloes which generally scratch the butt of the hide and at times even puncture it. The value of the hide may be reduced from 8 annas to Re. 1 per piece on account of goad marks.

(*c*) *Yoke marks.*—These are also confined to draft animals. At the place where the yoke rests, a thickened patch develops on the neck, and the more the animal is used the bigger becomes the patch. Badly adjusted yokes or uneven height of animals in the pair tend to unduly enlarge the area of the yoke mark. The grain of this area is completely lost and the portion becomes useless for leather making. The neck portion is not, however, so valuable from the point of view of high class leather and the discount on account of yoke marks is much less compared with, say, goad marks.

(*d*) *Scratches and punctures.*—These defects arise from miscellaneous sources, such as jungle thorns, barbed wire fencing, rubbing against rough surfaces, horning by other cattle and from vulture pecks in the case of dead animals if the hide is not flayed in time. Many otherwise good hides are known to go into the lower selections on account of the above mentioned blemishes.

(*e*) *Other injuries.*—Serious damage to hides takes place as a result of dragging the animals in slaughterhouses against rough surfaces before or after slaughter.

All the mechanical defects described above can be reduced considerably through care and skill on the part of those who handle the animals or the hides and thus great loss to the hide industry and trade in the country could be prevented. Propaganda among the people concerned that if they minimise these defects they are sure to be repaid for their efforts by obtaining better prices appears to be the only way of effecting improvement.

(6) BIOLOGICAL DEFECTS.

Damages to hides caused through ravages of insect pests and diseases are classed under biological defects. These impoverish the *hides and leave permanent injury to the grain.* The leather from *such pelts is weak and less resistant to abrasive wear.* Amongst the *insects and pests, warble flies and ticks* cause most damage to the hides.

(*a*) *Warble holes.*—The warble fly occurs in many parts of the world but has not been completely mastered anywhere. In India it is met with mostly in the dry parts of north and western India, *viz.*, the *North-West Frontier Province*, the *Punjab*, *Sind*, *Rajputana* and the western parts of the *United Provinces.* It does not seem to flourish in *Assam*, *Bengal*, *Madras*, *Bombay* and *Burma* on account of the comparatively moist climate of those areas. In the *Central Provinces*, *Bihar* and *Orissa* it is met with occasionally. The pest attacks generally cattle and not buffaloes.

Warbles damage the hides by causing holes in them—generally, 1|10″ in diameter. The hides are, therefore, rendered useless for many of the purposes to which leather is put. In normal times, many tanners refuse to purchase warbled hides at any cost. Whether they are rendered useless wholly or partly depends upon the location of the holes. The holes or marks are generally counted before making the purchases. The damage in Northern India on this account is enormous and in some cases the number of holes in a hide may go up to even a few hundred. Warbled hides are met with more frequently in winter months (October—March) than in other parts of the year.

It is difficult to estimate the annual loss caused by warbles, but there is no doubt that it is enormous and that many a good hide is completely ruined. Some idea about the prevalence of this pest may be had from previous findings. Cotes in 1891 stated* that 10 per cent of hides shipped from *Calcutta*, *Bombay* and *Madras* were deprecated on account of warbles, to the extent of half their value. Based on veterinary investigations, the Imperial Entomologist opined* in 1923 that 40 per cent of the *Punjab* cattle hides are warbled and the proportion is even greater in the case of *Baluchistan*, *Sind* and *Rajputana*.

(*b*) *Tick marks.*—Ticks stand second to warble flies in causing damage to hides. They are met with in the southern parts of India and the *Madras Province* is particularly tick infested.

In order to suck blood the ticks make perforations generally on the thinner portion of the hides, *i.e.*, on the belly. They become tiny sores and when healed up, make the grain surface rough and patchy which reduces the quality and, consequently, the price to an appreciable extent.

(*c*) *Pock and other marks.*—These are small permanent marks left on the grain side of the hide due to ulceration, said to be caused through rinderpest, and are most common in *Bengal.*

Mange and skin diseases also leave permanent injury to the grain and reduce the price of hide and leather made from it.

---

*Report of the Hide Cess Enquiry Committee.

(7) OTHER FACTORS.

(*a*) *Age of animal.*—The hide of an old animal is generally in every way inferior to that of a young one. It is usually not strong and is papery with little substance. Good quality leather cannot be made from it and it is generally discounted by the hide trade.

(*b*) *Part of the year when killed or dead.*—On account of good climate and pasturage, in winter the animals are in better condition than in summer. Winter hides are therefore plumpier than summer ones and fetch a comparatively higher price. In cured goods reaching markets after some time, the hair is taken to adjudge the period of kill or death. In summer the hair is shorter and less dense than in winter when they are shiny, long and glossy.

(*c*) *Storage.*—This is another important factor affecting the quality. Hides kept over long periods or under improper storage deteriorate. The damage may be due to dampness, heat or through insects, vermin, rats and even white-ants. The period of safe storage depends upon a number of factors, *viz.*, atmospheric conditions, construction and ventilation of the godowns, the type of cure, handling of the hides, etc. Generally, merchants and shippers try to dispose of their stock as quickly as possible, but often hides may remain in storage or transit for about a year before they reach the tanner, in this country or abroad. Badly cured, handled and stored hides are known to develop what is known as " hair-slip ". This means loosening or slipping of hair from a raw hide and is a sign of decay. Hides showing hair-slip cannot be graded high. If the hair-slip is advanced, the hide becomes useless to the tanner and can only be made into glue.

(*d*) *Transport.*—Hides often deteriorate during transit particularly during summer months. The goods wagons, in which most of the traffic is carried, are generally made of iron and get much heated up and thereby the quality of the hides is affected. For this reason, the wet-salted hides from the north can be sent to the south only during the winter months of December to February. During the other months the long distance trade has to adopt dry cures.

B.—Sorting of hides by the trade.

(1) GENERAL.

The producers—butchers or *chamars*—all over the country sell their stocks to *beoparis* in the local market or in the village at low and flat rates. The hides then reach the commission agents in larger markets, who do some sorting before selling their stock to tanners or exporters. The latter two agencies re-assort the hides according to their requirement of tanning or export. In the latter case the hides are pressed in bales and suitably marked, before shipment.

The trade at present assorts the hides mainly according to four principal bases, *viz.*, (*i*) region, (*ii*) cure, (*iii*) quality and (*iv*) weight. These are discussed below.

(2) REGIONAL CLASSIFICATION.

The characteristic nature of hide depends to a great extent on the breed or the genetical type of the cattle. These differ from tract to tract and so does the quality of hides. In one batch of tanning, several hides—at times, even 1,000—are required. But the best results are obtained when all of them are of one type. For these reasons a system of regional classification has developed in the trade and hides from different areas are in demand in an unmixed condition.

The hides from a particular area are generally called by the name of the chief market of the tract or by the name of the district. There are many regional classifications and about 25 for kips and 5 for buff hides are briefly described below. Their broad differences are discussed but, to find out the actual difference in their structure and behaviour in the presence of tanning substances, a more intensive study would be required.

(*i*) " *Jullundurs* ".—Heavy cow hides obtained in the *Punjab* and in the area supplying the *Karachi* port are known as " Jullunders ". They are clean, big, broad and spready but generally lack in substance. The lighter hides from this area also move to *Calcutta* where they are included under " Agras ".

(*ii*) " *Agras* ".—Originally the hides pertaining to the area round about *Agra*, which are characterised by their good substance, long drawn pattern, nice trim and cleanliness and shiny appearance on the flesh side, were called " Agras ". At present, hides possessing the above distinctive qualities and produced in any part of the country, particularly Northern India, are also included under this name.

(*iii*) " *North Westerns* ".—These are obtained from a very vast area extending from *Allahabad* to *Eastern Punjab* and from the foot of the hills in the *United Provinces* to *Central India*. The hides have strength and shape similar to " Agras " but are somewhat flatter, thinner and not so well fleshed with the general appearance comparatively unclean.

(*iv*) " *Bareillys* ".—These pertain to the districts of *Bareilly* and *Moradabad* and *Rampur State*, etc., and are generally of good quality.

(*v*) " *Pachams* ".—This is a term common in the *Cawnpore* market and is applied to all hides coming from districts west of this place.

(*vi*) " *Purabs* ".—Hides coming from the neighbouring eastern areas to *Cawnpore* market are known by this name. The " *Purabs* " are generally inferior to " *Pachams* " in all respects.

(*vii*) " *Benares* ".—These pertain to the eastern and south eastern parts of the *United Provinces*. They are generally of inferior type, air-dried, but are cleanly fleshed and less spready.

(*viii*) " *Terais* ".—These hides are obtained from the foot of the Himalayas including Nepal. These are generally small in size, produce compact leather but are not available in large quantities.

(*ix*) " *Patnas* ".—These belong to *Western Bihar* and are usually crumpled and spoilt through careless drying. Considerable quantities of flesh are found adhering to them.

(*x*) " *Darbhangas* ".—These also come from *Western Bihar* but are well shaped, clean and strong without warbles. Leather made from these has a distinct and characteristic grain, which is prized by manufacturers.

(*xi*) " *Purneas* ".—Comparatively superior quality cow hides, from *Eastern Bihar* possessing excellent substance, large size, plump with clean and " Uncrumpled " surface. Most of them are obtained from village slaughtered animals but do not come to the general standard of " Slaughtered ".

(*xii*) " *Dinajpurs* ".—Pertain to the district of *Dinajpur* in *Bengal* and resemble " *Daccas* " in size, cure and quality.

(*xiii*) " *Meherpores* ".—Hides obtained from *Central* and *Western Bengal*. These are smaller in size, less substantial and plump but lightly plastered with salt, as compared with " *Daccas* ".

(*xiv*) "*Daccas* ".—Hides collected from *Eastern Bengal* and *Assam* at the *Dacca* market. They are available at *Calcutta* too. The cure is generally poor and the hides are over-plastered with salt. The size is uniform though small, and they are somewhat spongy in texture.

(*xv*) "*Rungpores* ".—Hides obtained from *Rungpore* and other northern districts of *Bengal*. They are of medium size, well flayed and cured and dry-salted. Amongst the " dry-salted ", they are reckoned to be one of the best.

(*xvi*) " *Ranchis* ".—These pertain to *Chota Nagpur* area and are small, light and air-dried. The quality is medium to poor.

(*xvii*) " *Sambalpurs* ".—These are similar to " *Ranchis* " and pertain to *Eastern States* and parts of *Central Provinces*.

(*xviii*) " *Jubbulpores* ".—These pertain to the *Jubbulpore* and other adjoining districts of *Central Provinces*. They are heavy, spready and good textured hides.

(*xix*) " *Nagpurs* ".—These are obtained in central parts of *Central Provinces* and are of medium weight. The quality is rather poor, both in weight and texture.

(*xx*) " *Raipurs* ".—Light and medium quality hides obtained from *Raipur* and other adjacent districts of *Central Provinces* and the *Eastern States*.

(*xxi*) " *Ganjams* ".—Cow hides procurable in *Orissa* and northern districts of *Madras Province*. They are also generally light and poor.

(*xxii*) " *Nellores* ".—One of the best types of hides available in *Madras Province*. These are quite large but many are badly branded.

(*xxiii*) " *West Coasts* ".—These are obtained from the western coastal districts of *Madras Province* and are small and light in weight. They are in good demand from *Madrasi* tanners, for making dressed hides for export.

(*xxiv*) "*Bangalores*".—These pertain to *Mysore State* and are medium size, well grown hides which have a fairly plump substance.

(*xxv*) "*Hyderabads*".—These come from the *Nizam's Dominions* and are characterised by their square shape and good pattern.

(*xxvi*) "*Sholapurs*".—These are considered to be the best hides in the *Bombay Province* and are good textured and substantial.

(*xxvii*)"*Gujarats*".—Hides obtained from the northern districts of *Bombay Province*. These are large, spready, and thin and are also irregular in substance. Some also have brand marks.

The above regional classifications pertain to kips. The buff hide classifications are comparatively fewer and the more important of them are the (*i*) "*North-Westerns*", (*ii*) "*Agras*", (*iii*) "*Purneas*", (*iv*) "*Darbhangas*", and (*v*) "*Daccas*". The first named is the heaviest of the lot and is preferred for heavy harness and mechanical leathers. "*Agras*" also are heavy and well finished. The rest are ordinary type of hides.

(3) CLASSIFICATION ACCORDING TO CURES.

As described in Chapter II, there are three main methods or cures for preparing the hides for the market, *viz.*, (*a*) wet-salted, (*b*) dry-salted, and (*c*) air-dried. and they are classified accordingly for the purpose of quality distinctions.

(4) CLASSIFICATION ACCORDING TO QUALITY.

The regional and cure classifications are sub-divided into assortments based on quality. These are (*a*) "Slaughtereds", (*b*) "Deads", (*c*) "Rejections", (*d*) "Double Rejections", and (*e*) "Triple Rejections". These terms are generally represented by the letters S, D, R, D|R and T|R respectively.

The terms "slaughtered" and "dead", do not here refer to the manner of death of the animal but are taken to indicate the intrinsic quality of the pelt. Inferior hides from animals actually slaughtered may fall amongst the "Deads" or even in a lower grade, while hides from dead animals but which are plump, substantial and free from blemishes may be grouped under "Slaughtereds".

The "Slaughtereds" are practically free from all visible defects and are divided into two sub-groups, *viz.*, "Commissariat Slaughtereds" and "Second" or "Ordinary Slaughtereds". The former represent the best type of hides and as the name indicates are generally drawn from cantonment slaughterhouses, but good hides from city and town slaughterhouses are also included therein. These hides have generally minor defects and belong to well conditioned and young animals. The "Second" or "Ordinary Slaughtereds", have slightly more defects and the deads some more and so on. An idea about the type and number of defects in each grade may be had from the Hamburg classification, described later.

(5) CLASSIFICATION ACCORDING TO WEIGHT.

The above grades are further sorted on the basis of weight into (*a*) Lights, (*b*) Mediums, and (*c*) Heavies. The actual weights of each class differ from tract to tract depending upon the breed of animals and the system of cure prevalent in an area. The average range of weight for the different cures are given below :—

Average range of weight per hide in different types of cures.

— —	Green (trimmed).	Wet-salted.	Dry salted.	Dry-framed	*Saktis.*
	lb.	lb.	lb.	lb.	lb.
Kips—					
Light ..	10 to 18 ..	7½ to 12½	5 to 9 ..	3½ to 6½ .	3¾ to 6¾.
Medium ..	18 to 28 ..	13½ to 21	9 to 14 ..	6½ to 10..	6¾ to 10½.
Heavy ..	above 28	above 21	above 14	above 10	above 10½.
Buff hides—					
Light ..	25 to 40 ..	18 to 29 ..	12½ to 20	9 to 14½..	10 to 15½.
Medium ..	40 to 60 ..	29 to 43 ..	20 to 30 ..	14½ to 21½	15½ to 23.
Heavy ..	above 60	above 43	above 30	above 21½	above 23.
Cow calves ..	4 to 10 ..	3 to 7½ ..	2 to 5 ..	1½ to 3½..	1½ to 3¾.
Buff calves ..	10 to 20 ..	7 to 14½	5 to 10 ..	3½ to 7 ..	4 to 7¾.

C.—Classifications current in the different branches of the trade.

In accordance with the leather they tan in India or abroad, the shippers, the chrome tanners, the bark tanners, the *Madrasi* or South Indian tanners and the *chamars* require hides of different types, qualities and cures. Each one of these groups has its own separate system of classifying the hides and these are briefly described below.

(1) THE SHIPPERS—HAMBURG CLASSIFICATION.

In the case of raw hides exported from India, the shippers work on what is known as the " Hamburg classification ". This has been fixed by mutual agreement between them and the buyers abroad and is now a generally accepted basis for contracts. These specifications originated from Hamburg, the important terminal market for hides exported from India. It is exclusively applicable to air-dried and dry-salted hides.

The hides are first classified according to cure and region of production. Under each of the above, several quality grades are prescribed. The range of weight as well as the schedule of packing is also prescribed. The classification is reproduced below in full.

Cow Hides.

" *Daccas.*"

Hides of genuine preparation and condition. Up to 25 per cent somewhat heavier cure or with small fleshings are permitted. Washed hides are excluded as much as possible and a small percentage of properly re-cured hides is permitted. Heads are trimmed pointed. Legs are cut immediately below knees, although a little discretion is allowed here.

BCS ..	“Dry Salted Best Chittagong Slaughtered.”
BDS ..	“Dry Salted Best Dacca Slaughtered.”
MDS ..	“Dry Salted Mixed Dacca Slaughtered.”
MDD ..	“Dry Salted Mixed Dacca Deads.”
DRD ..	“Dry Salted Dacca Double Rejections.”
DRT ..	“Dry Salted Dacca Triple Rejections.”

“*Real Meherpores.*”

Mostly strong hides of absolutely clean flesh side with only very little cure although very light fleshings or a very light cure cannot be avoided in all cases.

RMS ..	“Dry Salted Real Meherpore Slaughtered.”
RMD ..	“Dry Salted Real Meherpore Deads.”
RMR ..	“Dry Salted Real Meherpore Rejections.”
RMRD ..	“Dry Salted Real Meherpore Double Rejections.”

“*Meherpores.*”

“*Meherpore*” and proveniences like “*Burdwan*” and so on with heavy cure and|or flesh.

MS ..	“Dry Salted Meherpore Slaughtered.”
MD ..	“Dry Salted Meherpore Deads.”
MR ..	“Dry Salted Meherpore Rejections.”
MRD ..	“Dry Salted Meherpore Double Rejections.”

“*Salted Agras.*”

Hides from *Agra* and north-western districts with light cure. Hair assortment same as arsenicated Agras. These hides are delivered without mouth, eyes and tails with the exception of the double rejections. Calf skins to be assorted exactly like cow hides.

SACCS ..	“Dry Salted Agra Commissariat Slaughtered.”
SACS ..	“Dry Salted Agra Slaughtered.”
SAAS ..	“Dry Salted Agra Slaughtered, No. II.”
SACR ..	“Dry Salted Agra Rejections.”
SACRD ..	“Dry Salted Agra Double Rejections.”

“*Arsenicated Superior Agra Cow Hides.*”

AACCS|A ..	“Arsenicated Agra Commissariat Slaughtered Superior.”

Full-bodied and long-drawn commissariat hides absolutely clean of flesh with light shiny flesh side without cuts and as far as this is recognisable in the raw state, without the least defect on the hair side and without warbles.

AACS|A .. "Arsenicated Agra Slaughtered Superior."

Strong full bodied hides without flesh and shiny flesh side without open warbles ; small insignificant hair defects are permitted but without deep cuts on the flesh side.

AAS|A .. "Arsenicated Agra Slaughtered, No. II Superior."

Absolute clean, shiny flesh side. As regards hair, not quite as good as AACS. This is supposed to be an intermediate assortment between "Slaughtereds" and "Deads". Hides with up to five visible warbles are permitted.

AACD|A .. "Arsenicated Agra Deads Superior."

Clean, shiny flesh side. They may contain up to ten visible warbles. As regards the hair selection, they are according to the assortment.

AACR|A .. "Arsenicated Agra Rejections Superior."

Flesh side clean and shiny. As regards assortment and strength, they are inferior to AACD|A.

"Arsenicated Agra Cow Hides."

Hair assortment exactly as in the superiors, only somewhat darker and not so clean on the flesh side. As regards hair assortment, according to the respective grade.

AACCS	..	"Arsenicated Agra Commissariat Slaughtered."
AACS	..	"Arsenicated Agra Slaughtered."
AAS	..	"Arsenicated Agra Slaughtered, No. II."
AACD	..	"Arsenicated Agra Deads."
AACR	..	"Arsenicated Agra Rejections."
AACRD	..	"Arsenicated Agra Double Rejections."

"Arsenicated North-Western Cow Hides."

Strength and shape similar to "*Agras*". Partly flatter and thinner and not so well fleshed and of less clean appearance in general. As regards warbles and other defects the same as in the corresponding *Agra* assortment. All "Agras" and "*North-Westerns*" are without heads and are trimmed directly underneath knees.

AACS|NW	..	"Arsenicated North-Western Slaughtered."
AACD|NW	..	"Arsenicated North-Western Deads."
AACR|NW	..	"Arsenicated North-Western Rejections."

“ *Arsenicated Purnea Cow Hides.*”

Strong hides mostly spready from the *Purnea* and *Darbhanga* districts without warbles, nice and clean on the flesh. Assortment according to the grade purchased.

PRACS	“ Arsenicated Purnea Slaughtered.”
PRACD	“ Arsenicated Purnea Deads.”
PRACR	“ Arsenicated Purnea Rejections.”
PRACRD	“ Arsenicated Purnea Double Rejections.”

“ *Arsenicated Darbhanga Cow Hides.*”

Mostly spready strong to medium, strong hides without warbles. On the flesh side not so clean as *Purneas* and even partly somewhat crumpled. Assortment according to the grade purchased. Cheeks up to 50 per cent.

DACS	“ Arsenicated Darbhanga Slaughtered.”
DACD	“ Arsenicated Darbhanga Deads.”
DACR	“ Arsenicated Darbhanga Rejections.”
DACRD	“ Arsenicated Darbhanga Double Rejections.”
DACRT	“ Arsenicated Darbhanga Triple Rejections.”

“ *Arsenicated Uncrumpled Patnas* (*or Plains*).”

Hides of various provinces, fairly smooth and flat without very much flesh. A smaller portion, somewhat crumpled but these somewhat crumpled hides have a fairly clean flesh side. Assortment according to the grade purchased. Cheeks are allowed.

DPS|A	“ Arsenicated Uncrumpled Slaughtered.”
DPD|A	“ Arsenicated Uncrumpled Deads.”
DPR|A	“ Arsenicated Uncrumpled Rejections.”
DPRD|A	“ Arsenicated Uncrumpled Double Rejections.”

“ *Arsenicated Crumpled Patnas* (*or Commons*).”

Most strongly crumpled hides of various provinces assorted without consideration for shape with fair amount of flesh. Assortment according to the grade purchased.

DPS	“Arsenicated Crumpled Slaughtered.”
DPD	“ Arsenicated Crumpled Deads.”
DPR	“ Arsenicated Crumpled Rejections.”
DPRD	“ Arsenicated Crumpled Double Rejections.”
DPRT	“ Arsenicated Crumpled Triple Rejections.”

Buffalo Hides.

“ *Dry Salted Agra Buffalo Hides.*”

SAB|CS	“ Dry Salted Agra Buffaloes Commissariat.”
SAB|F	“ Dry Salted Agra Buffaloes Firsts.”
SAB|S	“ Dry Salted Agra Buffaloes Seconds.”
SAB|R	“ Dry Salted Agra Buffaloes Rejections.”

"Dry Salted Dacca Buffalo Hides."

DB|F	"Dry Salted Dacca Buffaloes First Selection."
DB|S	"Dry Salted Dacca Buffaloes Second Selection."
DB|R	"Dry Salted Dacca Buffaloes Rejections."
DBR|R	"Dry Salted Dacca Buffaloes Rejections—Double."

"Arsenicated Buffalo Hides."

AABCS	"Arsenicated Agra Buffaloes Commissariat Slaughtered."
AABS	"Arsenicated Agra Buffaloes Slaughtered."
AABD	"Arsenicated Agra Buffaloes Deads."
AABR	"Arsenicated Agra Buffaloes Rejections."
AABRD	"Arsenicated Agra Buffaloes Double Rejections."
AABS|NW	"Arsenicated Northwestern Buffalo Slaughtered."
AABD|NW	"Arsenicated Northwestern Buffalo Deads."
AABR|NW	"Arsenicated Northwestern Buffalo Rejections."
AABRD|NW	"Arsenicated Northwestern Buffalo Double Rejections."
ARPBS	"Arsenicated Purnea Buffalo Slaughtered."
ARPBD	"Arsenicated Purnea Buffalo Deads."
ARPBR	"Arsenicated Purnea Buffalo Rejections."
ARPBRD	"Arsenicated Purnea Buffalo Double Rejections."
DABS	"Arsenicated Darbhanga Buffalo Slaughtered."
DABD	"Arsenicated Darbhanga Buffalo Deads."
DABR	"Arsenicated Darbhanga Buffalo Rejections."
DABRD	"Arsenicated Darbhanga Buffalo Double Rejections."
ACBS	"Arsenicated Buffalo Slaughtered."
ACBD	"Arsenicated Buffalo Deads."
ACBR	"Arsenicated Buffalo Rejections."
ACBRD	"Arsenicated Buffalo Double Rejections."

Weight limits.

Hides up to 9 lb.	2 lb. up and down.
Hides over 9 lb. up to 16 lb.	3 lb. up and down.
Hides over 16 lb.	4 lb. up and down.

Packing.

Kips.

Up to 2 lb.	500 pieces per bale.
Over 2 lb.—3½ lb.	300 pieces per bale.
Over 3½ lb.—6 lb.	200 pieces per bale.
Over 6 lb.—9 lb.	150 pieces per bale.
Over 9 lb.—12 lb.	125 pieces per bale
Over 12 lb.—18 lb.	100 pieces per bale.
Over 18 lb.—20 lb.	80 pieces per bale.
Over 20 lb.	60 pieces per bale

" Arsenicated Buffalo Hides."

Up to 3½ lb.	300 pieces per bale.
Over 3½ lb.—6 lb.	200 pieces per bale.
Over 6 lb.—9 lb.	150 pieces per bale.
Over 9 lb.—12 lb.	125 pieces per bale.
Over 12 lb.—16 lb.	100 pieces per bale.
Over 16 lb.—18 lb.	80 pieces per bale.
Over 18 lb.—22 lb.	60 pieces per bale.
Over 22 lb.	50 pieces per bale.

" Dry Salted Buffalo Hides."

Up to 25 lb. packing same as for " Arsenicated Buffalo Hides ".

Over 25 lb.—30 lb.	50 pieces per bale.
Over 30 lb.—35 lb.	40 pieces per bale.
Over 35 lb.	35 pieces per bale.

(2) CHROME TANNERS.

Chrome tanners generally require hides for the making of shoe uppers and, therefore, go in mainly for superior quality of wet-salted kips. Some of the Chinese chrome tanners, at *Calcutta*, go in for very inferior, mostly dead hides to produce leather which is sold at cheaper rates for the making of inferior types of shoes and sandals.

In recent years, a classification known as the " Chrome Selection " has developed, in respect of this trade. There are, however, no statutory grades for this ; the specifications are purely personal as judged by selectors at the hide godowns.

(3) BARK TANNERS.

The factory scale bark tanneries at *Bombay*, *Cawnpore*, *Agra*, *Calcutta* and *Madras* come under this class. They generally tan a variety of leather, from calf skins to heavy buffalo hides for sole, harness or mechanical purposes. Each individual tanner has his own classification but the specifications are hardly put down on paper. Some of the tanners prefer to call the topmost grade as " Second ", while others start with " Primes ". After that come the " Rejections ", " Double Rejections ", " Triple Rejections ", " Double Triple Rejections ". Then comes the lowest class called " Warbled ". But, as said above, the judgment of the quality depends entirely on the buyer and the specifications are not rigid or fixed. If the demand is high and supply less. " Rejections " may be accepted as " Seconds " and *vice versa,* if the market conditions are otherwise.

(4) MADRASI OR SOUTH INDIAN TANNERS.

The large number of bark tanners in the South, who prepare dressed hides mainly for export, are classed as *Madrasi* tanners. They draw their supplies from *Calcutta, Cawnpore, Dacca* and other up-country markets and generally clear away goods that are left behind after satisfying the demand from the chrome and factory tanners. Generally, they have two classifications, the " Superior Selection " and " Madras or Inferior Selection." The first is obviously better than the second, with lesser defects both on the hair and the flesh sides. No written specifications exist in this case also.

(5) CHAMARS.

Although the trade is extensive inasmuch as the number of hides tanned by the *chamars* all over the country is quite big, there is no large scale buying or selling by or for the *chamars.* One or two hides is all that they need at a time which they obtain locally. Generally, very poor type of hides are purchased by them. Under the circumstances, there can be no fixed specifications for the hides required by the *chamars.*

D.—Grading of hides under the AGMARK.

Preliminary marketing surveys of agricultural and animal husbandry products in India have indicated that, apart from other defects, the practice of selling produce in mixed lots without any consideration for qualitative assortment was fairly common throughout the country. This meant loss both to the producer and consumer. The former did not get any benefit for his efforts to turn out better quality produce and the latter was unable to conveniently secure the right quality material which he desired to obtain. The case of hides is particularly bad, as they are required in large numbers by the tanners and others, and if they cannot obtain the right sort with any reliability for quality, the tanners cannot be expected to pay appropriate prices.

Accordingly, the grading and marking of the produce under statutory grade standards were considered desirable and a voluntary Act known as the Agricultural Produce (Grading and Marking) Act, 1937, was enforced from 1st April 1937. A number of commodities, including hides, were included under the Act. The scheme of grading and marking under the Act is generally known as the AGMARK scheme. It is only an effort on the part of the Government to help that section of the trade which wants to market its products according to known specifications and voluntarily submits the graded produce to government inspection at the time of packing and marking and also while it is being sold.

(1) THE AGMARK HIDE SPECIFICATIONS.

The quality specifications prescribed under the Act in respect of grading and marking the hides are reproduced in the following table. These were framed at a Tanners' Conference held at *Cawnpore* in July 1936 and modified at a subsequent conference held at the same place in February 1938.

Grade designations and definitions of quality for hides

1 Grade designation.	Definition of				
	Special characteristics respecting state or condi-				
	Hair side.				
	Constitutional. 2	Branding—iron marks. 3	Pox, scab, sores and skin disease marks. 4	Marks due to external injuries. 5	Scratches. 6
A	Hides from young or middle aged animals with no rib marks or signs of emaciation.	Not allowed	No pox, sore or marks of skin diseases allowed, but one small scab and a small sore may be allowed if not on the butt.	Not allowed§	One small superficial scratch not affecting the grain allowed if within 4 inches of the outer edge of the neck or belly portion only.
B	Slight rib marks allowed.	Not more than one brand mark allowed which may only be on the belly, neck or cheek.	No pox, or skin disease marks allowed. Two small scabs or sores allowed if not on the butt In the case of kips and buffalo hides these may be on the butt provided within 2 inches of the line of the spine.	Permitted on belly.§	Superficial scratches not affecting the grain allowed.
C‡	Rib marks freely allowed.	At least one half of the hide shall be free from brand marks.	At least half the hide shall be unaffected.	Allowed if on neck, belly, or below hip joint.§	Reasonably free from deep scratches.

---

* Warble holes are holes or spots which

† Shallow cuts are cuts not exceeding one

‡ Bull hides weighing over 12 lb. shall not be graded higher than C. Young

§ In the case of heavy and medium weight buffaloes only " one sore or cut *(kips, buffaloes and calves) produced in India.*

quality.

tion.			General characteristics.		
Flesh side.			Trimmed weight prior to curing.		
				Limits of weight.	
Flayers' marks and cuts. 7	Warbles and warble holes.* 8	State or condition. 9	Weight groups. 10	Buffalo hides. 11	Kips. 12
No deep cuts allowed. Not more than 4 shallow cuts† other than on the butt permitted.§	One open and not more than 3 blind warbles allowed.	The hides shall be reasonably clean and free from flesh, fat, and extraneous matter. Horns, ears, feet (from above the fetlocks) and tail (beyond 4 inches) shall be removed.	Heavy (H). Medium (M). Light (L). Calf (C).	60 lb. and over. 40 to 60 lb. 25 to 40 lb. Under 25 lb.	28 lb. and over. 18 to 28 lb. 8 to 18 lb. Under 8 lb.
Shallow cuts† allowed and one deep cut allowed if not on the butt.§	Not more than 5 open and 8 blind warbles allowed.				
Shallow cuts† allowed. A reasonable number of deep cuts or holes permitted if not on the butt.§	Not more than 10 open and a reasonable number of blind warbles allowed.				

can be opened with a blunt skewer.
fourth of the thickness of the hide.
bull hides up to 12 lb. may be placed in B grades but not in A.
markin the hair or flesh side within two inches of the spine " may be permitted.

(2) METHOD OF GRADING AND MARKING.

At the grading stations, which at present are located at the slaughterhouses, suitable staff generally comprising a grader, a *Jachandar*, a recorder and a few coolies are maintained for the purpose of grading the hides. The entire cost of the staff, as well as all other expenses connected with the scheme, are borne exclusively by the Central, Provincial or Indian State Government, as the case may be. Soon after flaying, the hides are brought to the grader. At larger slaughterhouses, the grader with his staff may go round the flaying booths and grade the hides on the spot, after they are cleaned and trimmed. Each hide is weighed for classifying it into weight groups, *e.g.*, heavy, medium or light. The grader, thereafter, examines each hide in the light of the specifications detailed in the table on pages 162 and 163 and marks them either in A, B, C or " Rejection " grade.

Prior to 1st October 1940, for signifying the grades, circular brass discs showing the grade designation, weight classification and serial number, were attached to each hide at the root of the tail by means of a wire or twine, and secured with the lead seal bearing the word ' AGMARK ' on one side, and the code letters of the grading station on the other. Due to chemical reactions, however, the discs used to get blurred and coated with deposits. Thus the task of reading the grade marks became difficult. It was also observed that at times the brass discs were detached, and sold as brass, by coolies, etc. The discs were also expensive and used to cost Rs. 15 before and Rs. 30 per 1,000, after the present war. Accordingly, the use of discs was discontinued with effect from 1st October 1940. Instead, a new system of indicating grade designation marks was brought into use. This consists of punching holes of ¼" diameter at the root of the tail. The grades A, B and C are respectively represented by 2, 3 or 4 holes. The distance between the holes is ¼" from each other. These are arranged as shown in the diagram facing page 198. A lead seal bearing the word AGMARK on one side and a letter representing one of the weight classifications, namely, H, M, L or C, as the case may be, on the other, is secured to each hide by a piece of twine or tag which is passed through all the holes. The place of packing is also indicated on the lead seal, in code letters. The correct size of the holes is shown in the diagram and it will be seen that they occupy very little of the hide surface and are right near the root of the tail.

(3) WORKING OF THE AGMARK HIDE GRADING SCHEME.

Although the Agricultural Produce (Grading and Marking) Act came into force from 1st April 1937, the grading of hides on an experimental basis was commenced a few months earlier in December 1936. Thanks to the co-operation of butchers, flayers, dealers and others, the slaughterhouses at *Agra* and *Delhi* were the first to give the lead. Subsequently grading was started at the two slaughterhouses at *Tangra* and *Garden Reach* in *Calcutta* from August and December, 1937 respectively. A station at *Rampur* was also opened in July and another at *Karachi* in November 1938. Two more stations were added, *viz.*, at *Bandra* (*Bombay*) and *Bareilly* in February and December, 1939, respectively. At *Agra* grading is done at all the three slaughterhouses. Besides the above regular grading stations the Government of the United Provinces organised peripatetic parties primarily for bringing about improvement in flaying, but these parties also were authorised to grade hides.

(*a*) *Number of hides graded.*—The total number of hides graded at all the stations up to the close of December 1940, was 730,491 of which 465,747 or 64 per cent were kips, including calves, and 264,744 or 36 per cent were buff hides including calves. The value of these hides is estimated at about Rs. 32 lakhs. The yearly progress of work at the different stations may be judged from the figures in the table below.

Number of hides graded at the various grading stations.

(1937—1940).

Stations.	1937.		1938.		1939.		1940.	
	Kips.	Buffs.	Kips.	Buffs.	Kips.	Buffs.	Kips.	Buffs.
Agra	11,555	16,484	10,040	15,590	10,217	14,961	12,209	18,682
Delhi	17,162	41,676	16,717	38,063	15,496	26,935	14,919	19,668
Tangra	23,266	2	34,466	7,070	32,217	12,856	35,665	15,598
Garden Reach ..	..	..	28,266	990	22,373	811	31,815	1,017
Rampur	..	..	2,845	45	6,583	6,591	12,759	12,773
Karachi	..	..	2,293	69	12,673	475	9,161	569
Bandra	..	..	..	..	43,859	2,912	53,325	6,841
Bareilly	..	..	..	..	211	136	5,625	3,027
Total ..	51,983	58,162	94,627	62,727	143,629	65,677	175,508	78,178

It may be observed that the number of hides graded from year to year has progressively increased. The number, however, remains small compared with the total hides put on the market in the country. Suggestions for expanding the activities are contained in the chapter on the " Re-organisation of Hide Marketing ".

(*b*) *Quality of hides graded.*—The figures in the following table show the proportion of hides classified under different grades, at the various stations during the year 1940.

Percentage of hides classified under different grades. (1940).

—	Agra.	Delhi.	Tangra.	Garden Reach.	Rampur.	Karachi.	Bandra.	Bareilly.
Kips—								
Total number graded	2,209	14,949	35,665	31,815	12,759	9,161	53,325	5,625
Grades—								
Heavy—								
A.	3·1	10·7	10·9	1·4	6·3	2·5	*Nil*	7·8
B.	6·5	17·2	11·7	1·5	22·6	8·8	1·5	18·4
C.	18·4	6·4	8·6	2·3	18·9	15·0	24·0	8·2
Medium—								
A.	7·5	12·6	11·6	5·1	7·9	3·5	*Neg.*	25·9
B.	11·2	25·0	11·5	5·5	16·9	15·3	13·3	19·1
C.	22·7	7·6	11·8	8·9	13·4	15·4	24·0	7·8
Light—								
A.	7·4	2·4	11·0	19·5	1·0	2·6	0·1	8·8
B.	6·2	4·3	12·0	25·7	1·3	7·1	10·3	2·1
C.	15·0	1·6	5·3	19·9	1·6	7·8	13·1	0·7
Rejections.	0·4	5·5	1·9	10·1	7·9	10·2	11·6	0·5
Calves—								
A.	1·0	2·5	*Nil*	*Nil*	*Neg.*	0·3	0·1	0·3
B.	0·3	3·2	0·1	*Nil*	*Neg.*	4·1	0·5	0·2
C.	0·3	0·8	3·6	*Nil*	*Nil*	7·4	1·5	0·2
Rejections.	*Nil*	0·2	*Nil*	0·1	2·2	*Nil*	*Nil*	*Nil*

Percentage of hides classified under different grades (1940)—**contd.**

—	Agra.	Delhi.	Tangra.	Garden Reach.	Rampur.	Karachi.	Bandra.	Bareilly.
Buff hides—								
Total number graded	18,682	25,021	15,598	1,017	14	569	6,844	3,027
Grades—								
Heavy—								
A.	2·0	15·1	28·1	5·2	21·4	5·6	43·1	1·9
B.	5·6	21·1	31·0	3·7	14·3	14·8	49·7	4·6
C.	8·2	3·3	16·1	17·5	14·3	18·3	1·2	19·3
Medium—								
A.	5·0	5·6	5·9	4·0	28·6	1·4	1·8	10·4
B.	13·0	16·4	9·2	9·6	7·1	4·4	2·9	8·6
C.	24·2	6·1	4·7	28·3	14·3	23·9	0·1	22·1
Light—								
A.	3·1	0·9	0·1	1·2	*Nil*	0·7	*Nil*	2·9
B.	7·1	1·8	0·2	6·5	*Nil*	1·2	*Nil*	1·8
C.	9·7	0·6	0·1	10·8	*Nil*	6·1	*Nil*	1·4
Rejections.	0·1	0·3	4·6	12·9	*Nil*	14·8	1·2	1·6
Calves—								
A.	4·7	6·8	*Nil*	*Nil*	*Nil*	1·6	*Nil*	21·1
B.	6·8	14·2	*Neg.*	*Nil*	*Nil*	2·6	*Nil*	0·7
C.	10·4	7·7	*Neg.*	*Nil*	*Nil*	3·7	*Nil*	3·3
Rejections.	0·1	0·1	*Neg.*	0·3	*Nil*	0·9	*Nil*	0·3

The data throw some light on the quality of hides available in different parts of Northern India and should be of some use to the trade in checking up their past purchases from these centres. Amongst the kips, about 30 per cent of the hides fall under heavies, 38 per cent under mediums, 23 per cent under lights and 3 per cent under calves. The highest percentage of heavy hides are met with at *Rampur*, mediums at *Bareilly* and lights at *Garden Reach.*

In case of buff hides nearly 45 per cent fall under heavies, 32 per cent under mediums, 8 per cent under lights, and 10 per cent under calves. At *Bandra* and *Tangra* the proportion of heavies is very high—94 per cent in the case of the former and 75 per cent for the latter. The reason is that at these slaughterhouses, young she-buffaloes which are imported for the production of milk are slaughtered in their prime, when they become dry. The proportion of calves, on the other hand, is about a fourth at *Agra, Delhi* and *Bareilly* stations.

On the basis of quality, 23 per cent kips come under A grade, 35 per cent under B, 36 per cent under C and 6 per cent under "Rejections". It may be observed that only 0·2 per cent cow hides at *Bandra* come under A grade, 62·6 per cent under C and 11·6 per cent under "Rejections". The reason is that very little attention is paid there to the proper flaying of hides and it may be observed in general that the larger the slaughterhouse the lesser the attention which is paid to the flaying of the hide.

On an average, 29 per cent of the buff hides fall under A grade, 32 per cent under B, 34 per cent under C and 5 per cent under "Rejections". It would appear that buff hides, on the whole, receive a better handling and flaying, as they fetch comparatively better prices.

Under the AGMARK scheme attempts are also being made to bring about a general improvement in the flaying of "slaughtered" hides. A system of paying premiums for well flayed hides was accordingly introduced. This has already been discussed on pages 62 and 63 in Chapter II—Preparation for Market.

(4) FINANCE AND COSTS OF GRADING.

The hide grading scheme under the AGMARK was initiated on an experimental basis and in the beginning, the cost of running the stations was borne on the budget of the Agricultural Marketing Adviser. As the utility of hide grading came to be recognised, the financing of the stations was gradually taken over by the respective provincial and State governments.

The cost of grading ranges between an anna to an anna and a quarter per hide. Approximately two-third of this is on account of the establishment and contingencies. Only about a third of the cost is due to brass discs, lead seals, etc. With the introduction of the punching method for marking the hides, the expenses on this account are now considerably reduced.

(5) COMPARISON OF AGMARK SPECIFICATIONS WITH TANNERS' AND SHIPPERS' CLASSIFICATIONS.

Trial consignments of graded hides were sent to tanners as well as to shippers with a view to ascertaining how far these came to the standard required by them and also to find out how the AGMARK specifications compared with their classifications. The results of these trials are shown in the table below :—

Results of a trial consignment of 82 graded hides sent to a tanner at Cawnpore, in April 1940.

—	AGMARK classification.		Tanners' classification.	
	Grades.	Number.	Number.	Grades.
***Wet-salted buff hides* ..**	A	11	2	" Harness and Saddlery Factory Selection " .
	..	..	10	" Seconds ".
	B	19	19	" Double Rejection "
	..	..	7	" Triple Rejection ".
	C	9	1	" Double Triple Rejection ".
	Total	39	39	
***Wet-salted kips* ..**	A	9	7	" Harness and Saddlery Factory Selection."
	..	..	2	" Rejection ".
	B	15	15	" Double Rejection ".
	..	..	5	" Triple Rejection ".
	C	9	4	" Double Triple Rejection ".
	Total	33	33	
***Dry-framed kips* ..**	A	4	2	" Double Rejection ".
	B	4	1	" Triple Rejection ".
	C	2	7	" Warbles ".
	Total	10	10	

Results of a trial consignment of 36 *wet-salted graded kips sent to a tannery in Madras in March* 1941.

AGMARK classification.		Tanners' classification.	
Grades.	Number.	Number.	Grades.
A	13	8	" First."
	..	5	" Seconds."
B	19	2	" First ."
	..	10	" Seconds."
	..	7	" Thirds."
C	4	1	" First.
	..	3	" Thirds."
Total ..	36	36	

Results of a trial consignment of graded dry-framed kips appraised by a shipper at Calcutta.

AGMARK classification.		Shippers' classification.	
Grades.	Number.	Number.	Grades.
A	5	5	AACS
B	15	3	AACS
	..	12	AAS
C	15	4	AAS
	..	10	AACD
	..	1	AACR
" Rejections " ..	3	3	AACR
Total ..	38	38	

From the above examples it may generally be inferred that the AGMARK grades closely correspond with the classification adopted by tanners as well as shippers. In any case, they give a fair indication of the quality which buyers can expect in a consignment of AGMARK hides.

E.—Note on the system of grading and marking in countries abroad.

The foregoing description of conditions in India shows that except for the statutory grade specifications in the case of AGMARK hides, the trade, on the whole, does not have any recognised system of defining the qualities of Indian hides. In any case, except for the Hamburg classification, no other specifications are defined on paper and hence there is nothing definite to guide hide selectors or others. Conditions in important hide producing countries abroad are, however, very different. Each one of them possesses well defined grade specifications and contract terms which constitute the basis for a major portion of the hide trade. The specifications prescribed in some of the countries are described below.

(1) UNITED STATES OF AMERICA.

(a) *Tentative market classes and grades of green salted kips and calf skins.*

Weight groups—

Kips ..	.. Heavy trimmed	.. 17 to 25 lb.
Kips ..	.. Light trimmed	.. 12 to 17 lb.

Trimmed calves are divided into five groups ; under 4 lb., 4 to 5 lb., 5 to 7 lb., 7 to 9 lb. and 9 to 12 lb.

Classification.—*Class A.*—A Class A kip or calf skin is one which was properly bled and fully cured and is free from visible stains, discolouration or other curing defects.

Class B.—A Class B kip or calf skin is one which was not properly bled but is fully cured. Such a kip or calf skin shows slight blood stains but is free from other visible stains, discolouration or other curing defects.

Class C.—A Class C kip or calf skin is one which was not properly bled and shows pronounced blood stains or is not fully cured or was pickled or resalted. A kip or calf skin of this class must be free from visible stains, discolouration, or other curing defects except blood stains.

Class D.—A Class D kip or calf skin is one which was not properly bled or cured and shows pronounced and extensive blood stains or other defective areas. This class includes kips and calf skins which show salt stains, grain slips, or areas which have been heated.

Each of the above classes is sub-divided into four grades. Definitions of the grades follow.

No. 1.—A No. 1 grade kip or calf skin is one which is free from cuts, holes, scores*, gouges or no area affected by rubs, drags, scratches where grain is damaged. It is not infested by grubs, scab, mange, sores, lice, warts, worms or bugs. Regular pattern.

No. 2.—A No. 2 grade kip or calf skin is one which possesses not more than four cuts, holes, scores, gouges, grubs or warts or a combination of not more than four cuts, holes, scores or gouges. It has a rubbed, dragged, scratched, scabby mangy, lousy or sore area or areas affecting not more than 10 square inches where the grain is damaged. Such a kip or calf skin is not infested by bugs or worms. Irregular pattern.

---

*A score is understood to be a cut penetrating not more than one-third of the thickness of the hide.

No. 3.—A No. 3 grade kip or calf skin is one which is branded and|or possesses more than four but not more than 10 cuts, holes, scores, gouges, grubs or warts or a combination of not more than 10 cuts, holes, scores or gouges. It has a rubbed, dragged, scratched, scabby, mangy, lousy or sore area or areas affecting not more than one-third of the kip or calf skin where grain is damaged. It is not infested by bugs or worms.

No. 4.—A Class A, B or C No. 4 grade kip or calf skin is one which has more than ten of the defects mentioned in grade 3. A Class D No. 4 grade kip or calf skin is one which has more than ten of the defects mentioned in grade 3 and|or is infested by bugs or worms.

(*b*) *Tentative standards : Market classes and grades for butcher and country green salted cattle hides (1932).*

Classes.	Sub-classes.	Cured net weight. (*Trimmed basis*).
Unbranded and branded ..	Extremes	23 to 43 lb.
	Buffs	43 to 58 lb.
	Heavies (buffs excluded) ..	58 lb. and over.
	Bulls	58 lb. and over.

Grade.	*Selection factors.*
No. 1	(*a*) Regular pattern (stuck throat or headless).
	(*b*) Free from deep scores or deep gouges which can be opened with a skewer, and cuts or holes which cannot be trimmed out without spoiling the pattern.
	(*c*) Free from any open grub holes or any grub spots which can be opened with a skewer.
	(*d*) Fully and properly cured with salt free from injurious foreign materials.
	(*e*) Free from hair-slips, scab, sores, warts, tick damage, rubs, drags, scratches, etc., discernible in the hair and damaging to the grain.

Grade.	*Selection factors.*
No. 2	(*a*) Slightly irregular pattern. (*b*) Cut throat. (*c*) Possesses not more than four deep scores or four deep gouges which can be opened with a skewer, or four cuts or four holes or any combination of such defects totalling not more than four. (*d*) Possesses not more than 35 open grub holes or grub spots which can be opened with a skewer. (*e*) Fully cured with salt free from injurious foreign materials. (*f*) Possesses hair-slips or any other curing defects or scab, sores, warts, tick damage, rubs, drags, scratches, etc., not to exceed an area of approximately one-quarter square foot. Such defects must be discernible in the hair and damaging to the grain.
No. 3	(*a*) Extremely irregular pattern. (*b*) Possesses more than four deep scores or four deep gouges which can be opened with a skewer, or more than four cuts or four holes provided that less than one-half the area of the hides is damaged. (*c*) Possesses more than 35 open grub holes or grub spots which can be opened with a skewer. (*d*) Possesses hair-slips, or any other curing defects or scab, sores, warts, tick damage, rubs, drags, scratches, etc., affecting an area of more than approximately one-quarter square foot, but less than one half the hide. Such defects must be discernible in the hair and damaging to the grain.
Rejects.	(*a*) Possesses hair-slips or any other curing defects or deep scores or deep gouges which can be opened with a skewer, or cuts, hole, scab, sores, warts, rubs, drags, scratches, etc., to such an extent that more than one half of the hide is damaged. (*b*) Damaged by fire or water. (*c*) Hides in this condition are usually classed as glue stock.

(c) *Grades specified under the Standard Hide Contract of the Commodity Exchange Inc., New York.*

Cattle hides are graded and selected in accordance with the following specifications :—

Domestic.

Grade.	Description.
Light Native Cows	Unbranded cow hides. 23 to 53 lb. and may contain *ex*-light Native Steers, 23 to 48 lb.
Heavy Native Cows ..	Unbranded cow hides. 53 lb. and up.
Branded Cows	Branded cow hides. All weights (23 lb. and up) and may include Branded *ex*-light Steers, 23 to 48 lb.
Native Cows and Steers (all weights).	Unbranded cow and steer hides. All weights (23 lb. and up). The standard or take-off for this grade may include a greater proportion of cut hides than the standard for the above-mentioned grades, but a standard lot shall not contain more than 5 per cent cut hides and/or a greater proportion of scores, knife marks, or other defects than is customary in a take-off containing the said maximum percentage of cut hides.
Branded Cows and Steers (all weights).	Branded cow and steer hides. All weights (23 lb. and up). Same standard of take-off as prescribed for Native Cows and Steers (all weights) grade.
" Pacific Coast " Native and Branded Cows.	Unbranded and branded cow hides. Produced in plants known in the trade as West Coast plants. All weights (23 lb. and up). Same standard of take-off as prescribed for Native Cows and Steers (all weights) grade.
	South American.
Frigorifico Extreme light Cows and Steers.	Usual Frigorifico Standard. Shipping range 8 to 18 Kilos. No selection for weights shall be made within the range of the pack as salted.
Frigorifico Cows	Usual Frigorifico Standard. Shipping range 18 kilos. and up.

Selection factors for domestic hides.—No. 1 selection comprises hides which are—

Sound and fully cured ; standard pattern ; free from cuts or holes through the hide ; free from slips ; free from warts ; except as otherwise provided in sub-division (*d*) hereof free from sores, scabs, or rubs damaging to grain ; free from a deep score in the body of the hide ; having less than 5 grubs, either open or which can be skewered.

No. 2 selection comprises hides which are—

Free from warts, except as otherwise provided in sub-division (*d*) hereof.

Hides which will not grade into the No. 1 Selection, but which qualify within the limits of a No. 2 Selection, as generally accepted in the trade.

Hides which are inferior to No. 2 Selection and for hides affected by the following characteristics are not tenderable for certification, and must be removed before a lot is offered for certification.

(*a*) Hides damaged by warts in excess of such as will grade into No. 2 Branded Selection.

(*b*) Hides affected by contagious disease.

(*c*) Glue or fallen hides.

(*d*) Worm-eaten hides.

(*e*) Hides damaged by other causes.

(*f*) Lots salted down with an excessive amount of previously used salt shall not be eligible for certification.

(2) ARGENTINA.

La Plata salted hides and calf skins.—The hides and calf skins are classified into the following groups :—

(*i*) *Barrigas.*—Skins of still-born animals with undeveloped hair.

(*ii*) *Nonatos.*—Skins of still-born and new-born animals with hair, weighing up to 3½ kilos, shipping weight.

(*iii*) *Mamones* (sucking calves).—Skins weighing from 3½ to 7 kilos each, shipping weight.

(*iv*) *Becerros* (yearlings, calves).—Skins weighing from 7 to 11½ kilos each, shipping weight.

(*v*) *Vaquillonas* (calves and young steers, extremes).—Skins of both sexes, weighing 10 to 20 kilos, shipping weight. Wide bellied cows which have already calved are generally excluded.

(*vi*) *Novillos* (oxen).—Weighing at least 20 kilos each, shipping weight.

(*vii*) *Vacas* (cows).—Weighing at least 18 kilos each, shipping weight.

(*viii*) *Toros* (bulls).—Hides of animals which have served for breeding or propagation purposes.

These are sub-divided into the following grades.

Frigorificos.—In this class are included hides of very special flaying, well freed from flesh, without snouts, ears and horns, washed clean, in green condition, salted with clean salt, and generally at least 95 per cent of the hides and skins to be without any visible defects after salting. They are products of large packing houses, killing for export.

The following are excluded :—

(*a*) Those which are scabby.

(*b*) Those damaged through garrapata, when as a result of these accumulating in certain parts of the hide, especially on the shoulders and neck there is evidence of visible damage to the hide.

(*c*) Those which show boils, ulcers or open wounds, which have caused damage to the grain.

(*d*) Hides with rubbed patches, stabs and similar damages, which have not healed. Hides with hairless patches caused by scrubbing or stabbing, etc., if the marks have disappeared or are healed and the hides show no fresh damage, are included.

Argentine Saladeros.—These are produced by large salted-beef establishments. They are washed, flayed and salted in a way similar to Frigorifico hides. There should not be more than 15 per cent defects in the hide after salting, this percentage includes 3 per cent hides with deep cuts and holes.

From Saladero hides are excluded hides from bulls, also scabby hides and those badly infected with garrapata which chiefly attach themselves to the neck and have badly damaged the grain.

Frigotipo or Frigorifico type.—These are best hides obtained from slaughterhouses killing for local consumption, and are flayed, cut down, freed from flesh, washed and salted in a way similar to Frigorifico hides.

Faults are admitted which are not more than 25 cm. for hides and 10 cm. for kips from the outside edge of the hide, and the line dividing the head from the shoulders (butt cut), not more than three cuts are allowed in the butt.

Hides having gouges (thin spots shaved out or damaged) so far as they can seen in the salted state are considered as badly flayed and are not included in this class.

Carniceria.—Carniceria are consumption hides, whose quality lies between Frigorifico type and Campos.

Campos.—These are usually the less desirable class of hides and skins from small slaughterhouses, village butchers' establishments and from farms, estates and ranches.

(3) England (New Castle).

The New Castle Hide Inspection Society has the following system of grading hides.

A committee of 12 members, composed of four representatives each of buyers, brokers and butchers employs a permanent official who acts as Hide Inspector. He classes and stamps all hides passing through the four New Castle markets, as A (first class), B (second class), or C (third class—ill-flayed or cut) according to quality, condition and freedom from warbles.

The necessary funds are raised by an inspection fee which is charged on every hide passing through the markets—1*d.* is payable by the butcher, 1*d.* by the tanner and ½*d.* by the broker.

A bonus is granted on all hides which pass as first class flayed. This bonus varies with the amount of funds in hand, but it is never lower than 2*d.* per hide.

Classification of hides.—First class.—(Clear and warbled) are stamped A.

Second class.—(Clear and warbled) are stamped B.

Third class.—(Ill-flayed and cut) are stamped C.

Clear hides (*i.e.*, those with no open warbles) are separated into their respective weight classes.

Warbled hides.—First class hides must not contain more than 8 warbles or warble holes reasonably ascertainable at the time of classing.

Second class hides.—No hide shall contain more than 25 warbles or warble holes reasonably ascertainable at the time of classing.

Weight classes.

Ox and heifer	90 lb. and upwards.
	80|89 lb.
	70|79 lb.
	60|69 lb.
	50|59 lb.
	49 lb. and under.
Cows	60|69 lb.
	50|59 lb.
	49 lb. and under.
Bulls	All weights go into one class.

(4) Germany.

The collection and sale of hides and skins in Germany is in the hands of the Association of German Hides and Skins Marketing Companies. Hides and skins collected by this Association are offered for sale at auctions which are held in practically all of the principal cities in Germany. Companies prescribe the manner of take-off.

Hides and skins are generally cured by salting and are divided into the following three groups :

(*a*) Those from abattoirs or those removed under similar conditions.

(*b*) Those bought, already cured, from butchers.

(*c*) Others.

The Association does not handle the last of these groups. General regulations require that hides and skins be labelled with the district of origin. Cattle hides are divided into four classes—cow, oxen, bull and others—and are then divided according to weights. The following deductions are made for defects :

For defects on the inferior parts.	1 per cent.
For defects on the choice portion.	2 per cent.
For defects on both portions	3 per cent.
For " kosher cuts " ..	3 per cent.
For up to 8 open worm holes	4 per cent.
For minor defects from salting.	1 per cent.
For larger defects from salting.	Up to 10 per cent.

(5) Belgium.

System of classification adopted by the Brussels Butchers' Syndicate.

Calf skins.

(*a*) Small, without head, with short legs. 7 kilos and less.

(*b*) Medium-size skins without head and with short legs.—7·1 kilos and over.

Cow, beef and bull hides.

I. *Cows*—	
(*a*) Extra light hides ..	20 kilos and less.
(*b*) Light hides	20·5 kilos and over.
(*c*) Medium hides ..	30 to 37·5 kilos.
(*d*) Heavy hides	38 kilos and over.
II. *Beef*—	
(*a*) Light hides	34·5 kilos and less.
(*b*) Medium hides ..	35 to 47 kilos.
(*c*) Heavy hides ..	47·5 kilos and over.
III. *Bulls*—	
(*a*) Light hides	45 kilos and less.
(*b*) Heavy hides	45·5 kilos and over.

The weights are determined upon cleaned hides with long legs, hollow tails, without muzzle and with horns. Calves are weighed without heads and with short legs.

(6) SOUTH AFRICA.

Export regulations regarding hides.

These rules apply to wet, dry and dry-salted hides produced in the Union of South Africa, South-West Africa, Bechuanaland Protectorate, Swaziland or Basutoland. Hides imported from any other territory are shipped separately.

Abattoir wet hides are marked and named according to the place of slaughter before leaving the abattoir. All hides are trimmed through the bottom of the knees and cheeks trimmed through the eyes and left as square as possible without faces, ears or noses ; empty tails.

Wet-salted hides are defined as hides which have been cooled off after flaying, then washed to remove blood and filth, salted with clean salt and stacked in a cool place. All wet-salted hides shall be shipped free of loose salt.

Range of weight limits.—Except in cases where hides are forwarded on consignment or where buyers make stipulations as to special assortments, the following shall be the assortments and the range of weight limits for hides.

——	Dry.	Dry-salted.
Calf	Under 4 lb.	Under 4 lb.
Kips	4 to 9 lb.	4 to 10 lb.
Light hides	9 to 14 lb.	10 to 20 lb.
Heavy	14 to 28 lb.	20 to 30 lb.
Extra heavy hides ..	28 lb. and upwards ..	30 to 40 lb.
Double extras	..	40 lb. and upwards.

INTER-CHAPTER SIX.

The quality of hides depends upon a number of factors which are of a very varied and complex character. The breed, sex and age of the animal, the tract to which it belonged, the manner in which it had been maintained, the diseases it had suffered from, the part of the year and its condition at the time of death or slaughter, and the way the hide had been flayed, cured, stored, transported and handled, all go to make the quality of the hide as well as of leather made from it. While making purchases, buyers look to (*a*) size and pattern, (*b*) substance, thickness and weight, (*c*) grain, (*d*) method and proficiency of curing, (*e*) biological defects, such as warble holes, tick marks, pock and other marks, etc., and (*f*) mechanical defects on the hair and flesh sides, such as flay cuts, brand, goad and yoke marks, scratches and punctures, etc. Larger, thicker well cured hides from comparatively young animals and free from blemishes are, as a rule, prized by the trade, and others are relatively discounted. The part of the year when the animal died or was killed and the methods of storage and transport also affect the quality of hides.

The sorting of hides is generally not practised until they reach the large scale assembling centres where the commission agents assort them before sale. The principal bases of grading recognised in the trade are (*a*) region, (*b*) cure, (*c*) quality, and (*d*) weight. As already stated, the quality of hides depends to a good extent on the breed of the cattle which differs from tract to tract. Thus hides from each tract possess some special characteristics and are classified in one group. There are numerous such classifications and hides from different tracts are generally called by the name of the chief market or of the tract or district, *e.g., Jullunders, Agras, Patnas, Daccas,* etc., etc.

According to cures, hides are divided into three main groups, *viz.*, (*i*) wet-salted, (*ii*) dry-salted, and (*iii*) air-dried which are arsenicated before export. Under (*i*) and (*ii*), there may be heavy, medium and lightly cured hides according to the quantity of salt used.

The regional and cure classifications are further sub-divided into assortments based on other quality factors. These are Slaughtereds, Deads, Rejections, Double Rejections, and Triple Rejections. The terms slaughtereds and deads do not refer to the manner of death of the animal but are taken to indicate the intrinsic quality of the pelt ; slaughtereds are practically free from all visible defects and the deads possess more defects and so on. The above grades are further sorted on the basis of weight into (*i*) lights, (*ii*) mediums and (*iii*) heavies. The actual weights of each class differ from tract to tract, depending upon the breed of animals, system of cure prevalent in an area and the classification adopted by different merchants, tanners, etc. In the case of hides meant for export, all the specifications including those of weight are given in what is known as the "Hamburg classification". This system has developed through mutual agreement between the exporters and buyers abroad and is now a generally accepted basis of contract between them. It exclusively applies to air-dried and dry-salted hides. The buyers for home use, *i.e.*, the chrome, bark or *Madrasi* tanners employ their own classifications which are generally unspecified and unknown to the public. The only written and statutory specifications are the AGMARK grades which were introduced in April, 1937, as an outcome of the marketing survey. On the recommendations of the Indian Tanners' Conference, they have been tried on an experimental basis at the slaughterhouses at *Agra, Delhi, Tangra, Garden Reach, Rampur, Karachi, Bombay* and *Bareilly*, during the past few years. The number of hides graded under the AGMARK specifications have increased progressively from year to year. From 1·1 lakh pieces in 1937, the figure rose to 2·6 lakh pieces in 1940.

Several trial consignments sent to the tanners have shown that hides graded under the AGMARK closely corresponded with their own assortments although they might have been called by different names. It is true that the working of the scheme has exhibited growing popularity from year to year, yet for various reasons it has not been possible to extend the activities to other slaughterhouses or for the trade to own it. Steps for reorganising the scheme have been discussed in Chapter IX.

Plate I.—Transport of dry hides on head-loads in *Gujarat* (*Bombay Province*).

Plate II.—Bundles being loaded in carts at a hide godown in *Peshawar*.

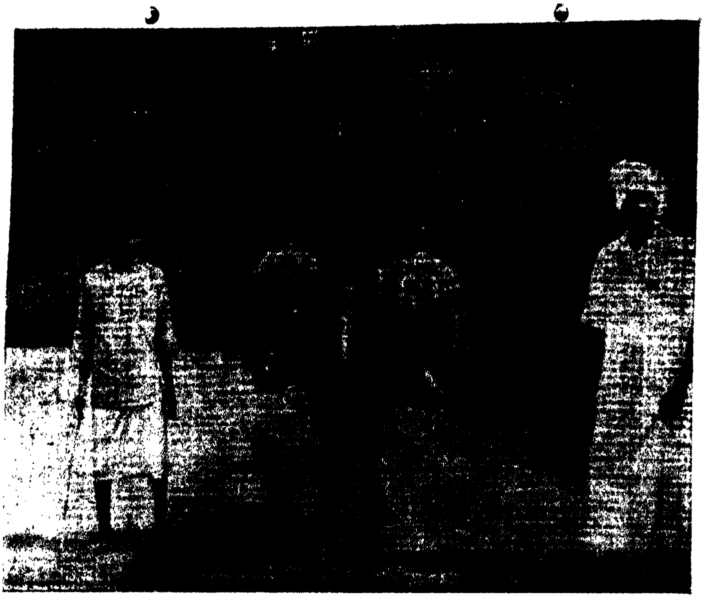


Plate I.—Transport of wet-salted hides to a weekly market in *Madras Province*, on a pony.

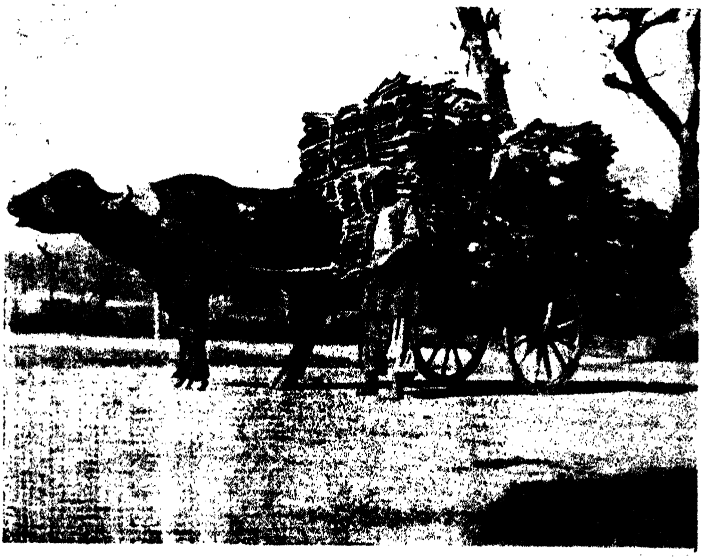


Plate II.—Single buffalo carts are used in *North-West Frontier Province* for transport of hides from market to railway station.

CHAPTER VII.—TRANSPORTATION.

A.—General.

Cattle and buffaloes are found almost all over the country, and so the production of hides takes place on a wide-spread basis. Large tanneries and assembling markets are, however, few and the hides from the different areas have to be transported up to them. They have also to be carried to the several ports for export to foreign countries. It is estimated that a fair portion of the hides produced in the country thus undergo transportation in some form or other, and only a small proportion is retained for tanning at the source.

Individual *chamars* in rural areas have only a piece or two for sale at a time and they try to dispose of the hides within a few days of their production, lest putrefaction sets in. Thus, in the early stages, the hides are collected and transported only in small lots and a large number of persons, are engaged in the work. Besides, this commodity is considered as rather "untouchable" in almost all parts of the country and as such is not transported along with other agricultural produce. Both these factors as well as the perishable nature of the commodity, make collection and transportation of hides difficult and arduous.

B.—Methods and costs of transport.

Almost all the means of transport commonly used for carrying other agricultural produce are employed for transporting hides. The main forms are the head-loads, *bahangis* (shoulder slings), pack-animals, bullock carts, hand carts, *tongas*, motor lorries, railways, boats and steamers. The use of bicycles for carrying hides has been reported from *Travancore State* only. The use of a particular means of transport depends upon the distance to be travelled, the number of hides to be carried, the facilities available for quick and safe despatch and upon the expenses that have to be incurred. Even in the same tract, their prevalence may vary considerably according to local conditions. It is, therefore, difficult to estimate with any precision the percentage of hides carried by the different modes of transport in the country as a whole. A brief description about each one of them is given below, together with the approximate costs.

(1) HEAD-LOADS AND *bahangis* (SHOULDER SLINGS).

The transport of hides on head-loads is common throughout the country. Producers who have 2 to 3 hides for sale at a time carry them on their heads to the nearest market, weekly *hat* or *shandy* (see plate I facing page 182), rural collectors also sometimes transport hides in this manner. This form of transport is quite popular in the hills. Green hides from urban slaughterhouses may also be removed to the purchaser's godown by this means when they happen to be in small lots. In markets, bundles of hides are often carried by coolies on their backs from one shop to another or from a cart to a godown and *vice versa* (see plate II facing page 182).

The system of carrying hides in *bahangis* (shoulder slings) is prevalent in some parts of the South. It is reported from *Madras Province* and *Mysore State* that some people bring small consignments of hides, particularly the wet-salteds, slung at the ends of a bamboo pole balanced on the shoulder. In the *Central Provinces* also, some hides are transported by this means.

As the producers or collectors themselves carry the hides, it is difficult to estimate correctly the cost of transport on head-loads or on shoulder slings. Labour is seldom hired for the purpose, and if at all, this is done only by collectors or small town merchants. It is estimated that on an average, the cost varies between 1 and 1½ anna per maund per mile depending upon the availability of labour, distance and the total load to be carried. In the markets coolies are paid according to local custom and the cost of loading and unloading and of carrying to and fro may vary from a pice to half anna or more per bundle.

(2) PACK ANIMALS.

The use of pack animals for transporting hides is common practically throughout the country. Some of the inter-provincial and even the import trade across the land frontier routes is carried by pack animals. Hides from Nepal, Tibet, Sikkim, etc., are brought mostly on ponies and mules and these animals are also frequently employed in *Kashmir State*, the *North-West Frontier Province*, the *Punjab*, the *United Provinces*, the *Central Provinces*, *Madras*, *Hyderabad State* and *Bombay-Deccan* (see plate I facing page 183). In *Sind*, *Kashmir State*, *Rajputana*, *South-Western* and *South-Eastern Punjab*, parts of the *United Provinces* and *Baroda State*, camels are used for carrying hides. Rural producers throughout the *Punjab*, the *United Provinces* and *the Central Provinces* take their hides to weekly markets on donkeys. Camels and mules carry the hides over long distances also, say 50 miles or more, but donkeys are generally used for short distance transport only.

Camels usually carry about 6 maunds dry hides, mules and ponies 4 maunds and donkeys about 2 maunds. The loads are usually larger when wet-salted hides are carried because they are more compact and a larger quantity can be conveniently accommodated.

As in the case of head-loads, it is difficult to estimate accurately the cost of transport by pack animals. Often, the animals belong to the owner of hides and he uses them for multiple purposes. In areas where pack animals are hired for carrying hides from one market to another, *e.g.*, *Baroda* and *Kashmir States*, *Rajputana*, etc., the rate depends upon the competition amongst the owners of animals and also upon the availability of other alternative means. The cost of carrying hides on camels varies between one pice and half anna per maund per mile.

(3) COUNTRY CARTS.

This is one of the most ancient and widely used means of transport available in India for all heavy goods. Larger lots of hides in all parts of the country are transported by this means (see plate II facing

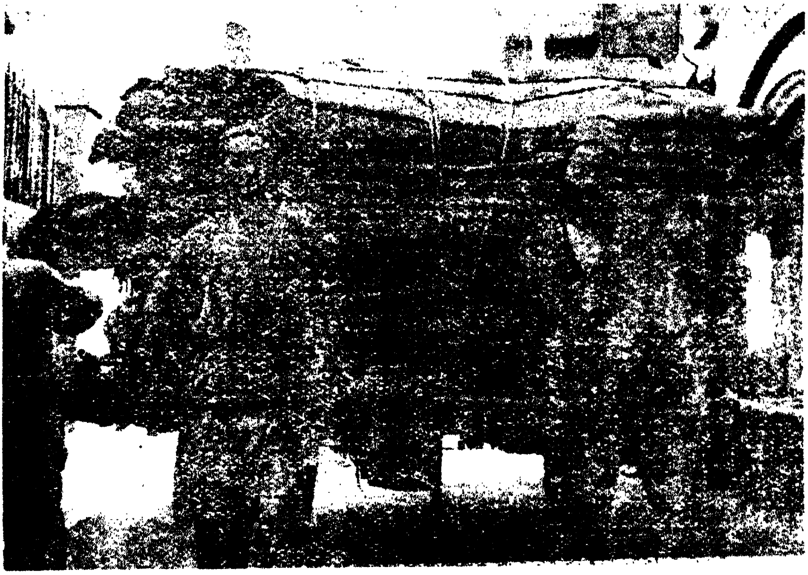


Plate I.—Hand carts are also used in all important markets for transporting hides.

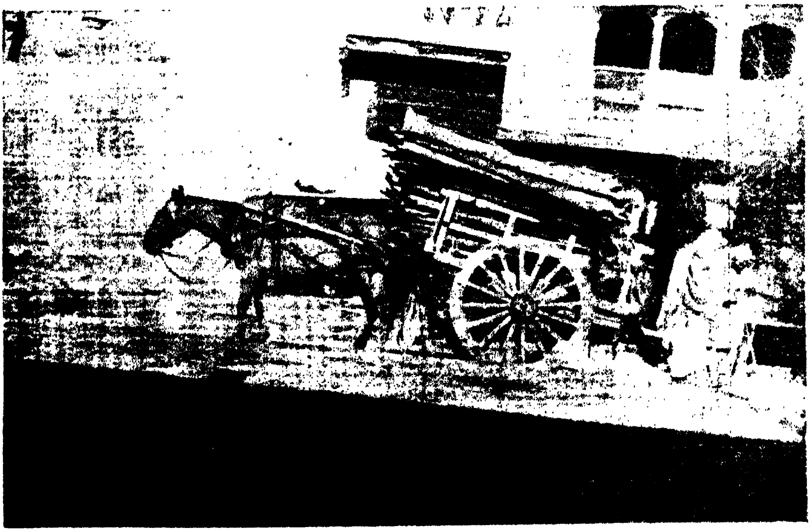


Plate II. The more common type of *tonga* used for transporting hides. The photograph was taken at *Peshawar*.

Plate I.—Transporting of dry-salted hides in a passenger *tonga* in the *Punjab.*

Plate II.—This is what happens when the hides remain uncared for at some of the railway goods sheds. Here the dogs are seen damaging the hides.

page 183). Carts drawn by camels, bullocks and buffaloes are employed for carrying the goods over short as well as long distances. In some parts of the country, if the load is small, say, between 10 and 15 maunds, carts drawn by a single animal are used. Camel carts are usually drawn by a single camel and carry about 25 maunds of goods. Hand carts pulled by men are used for transporting small loads of hides between one shop and another in a market (see plate I facing page 184). One or more persons are employed for drawing the cart according to the load and distance.

The cost of transport by country carts differs considerably from tract to tract and depends on local conditions. There is absolutely no fixity in regard to the charges and in the same tract they may be very different from time to time. At certain periods the number of carts plying for hire may be very large and at others, particularly during the sowing or harvest periods, these may fall down considerably. Freights decrease or increase accordingly. Besides, in this case, there is no fixed unit of charge, although the general practice is to charge by the weight of hides carried. Actual weighment is, however, never done for calculating the charge which is ordinarily settled by mutual negotiation. An idea about the rates commonly demanded in certain tracts may be had from the figures in the table below :—

Freight charges on hides transported by country carts.

Place.	Rate per maund per mile.
	Pies.
Gujranwala (Punjab)	1·5 to 2
Sholapur (Bombay)	2
Godhra (Bombay)	2
Dindigul (Madras)	1·75
Jubbulpur (C. P.)	1·0
Raigarh (C. P.)	1·5 to 2
Sambalpur (Bihar)	1·5

The rates refer to transport from the adjoining rural areas to the places mentioned in the table. They may appear to be slightly higher, compared with charges for other commodities. That is mainly due to two reasons. Firstly, hides from rural areas are mostly dry and hence not compact, and the carts cannot be loaded to the full. Secondly, in most cases, the full carrying capacity of the cart cannot be utilised.

In urban areas the rates charged for carrying hides by country carts or those pulled by men (hand carts) vary considerably from place to place and depend upon local custom and the distance.

They are usually much higher than the rates prevalent in rural areas. They vary between 3 and 6 pies per maund per mile.

(4) HORSE *tongas*.

These are sometimes used for transporting raw green hides from urban slaughterhouses to the godowns of local merchants. *Tongas* used for transport of goods are of a special pattern, different from those used for passenger (see plate II facing page 184). In case the loads are heavy, bullock carts or *thelas* may be used instead.

Hides and skins merchants generally engage these *tongas* on hire, but at times they themselves may possess a few. In *Delhi* they are paid 6 pies per raw green hide for transporting it from the slaughterhouse to the hide market.

Tongas, *ekkas* and *jhutkas* which ply in rural areas for ordinary passenger traffic are also at times used for transporting dry and half-tanned hides (see plate I facing page 185). The rates are settled by mutual negotiation.

(5) MOTOR LORRIES.

Wherever good metalled roads exist, the transport of hides by lorries has become popular. At larger markets, *e.g.*, *Cawnpore*, *Calcutta*, etc., this is the most popular mode of transport from the railway goods yards to the godowns of the merchants and *vice versa*. In the *Punjab* they are seen plying even on *kachcha* roads. Since in most parts of the country the general public treat hides as " untouchable " articles and passengers generally object to sit in buses which carry a bundle or two of raw hides as freight, the movement of hides by this means from villages on the roadside to town markets is rather restricted. But, whenever a full lorry load has to be carried between two nearby markets or between a market and a tannery, this means of transport is given preference even over railways for the following reasons :—

(*i*) Expense on carriage to and from railway stations is saved.

(*ii*) Certain station expenses and inordinate delays are avoided.

(*iii*) In addition to the above savings when the two places are connected both by road and rail, the freights by lorries are in most cases lower.

(*iv*) In most instances the time taken by lorries is much less compared with that taken by rail. This is an important factor which counts very much in the trade.

(*v*) Since the bodies of the lorries are generally made of wood no lining material is necessary. On the other hand, before loading the hides some straw, etc., has to be put into railway wagons which are made of iron. Without it, hides, particularly the wet-salteds, get damaged through heat and are stained by iron.

For all the above reasons, the transport of hides by lorries is fast gaining ground. It is reported from the *North-West Frontier Province* that hides from *Kurram, Kohat, Dir, Swat, Bajaur* and from Afghanistan across the *Khyber Pass*, are being brought to the *Peshawar* market more or less exclusively in lorries. It is true that rail facilities are not available from some of the above places, but approximately 75 per cent of the trade between the *Peshawar* market and several markets in the *Punjab, viz., Wazirabad, Gujranwala, Lahore* and *Amritsar*, is carried by this means. Merchants in *Jullundur* and *Amritsar* are now sending their stock to *Delhi* in lorries. From hill-markets in *Kashmir State*, the *Punjab*, the *United Provinces*, *Bihar*, *Bengal* and from *Coorg*, the hides are carried in lorries to rail-heads or even further down to the markets.

There is, however, no fixity in regard to the rates charged. They vary from tract to tract depending upon local conditions and competition from alternative means of transport. In the same tract, they may vary considerably from time to time. An idea about the usual costs in some of the tracts may be had from the figures in the table below :—

Freight on hides transported by motor lorries.

Area.	Distance (miles).	Calculated rate per maund per mile.
		Pies.
Kashmir State	..	2·0
Rawalpindi—Lahore	170	0·7
Jullundur—Amritsar	49	1·0
North Arcot—Madras	135	0·6
Bangalore—Madras	222	0·5

The above rates were ascertained during the survey in 1937. These are not fixed and are liable to considerable variation. It may, however, be noticed that the rate for journeys in plains is much lower than that for transporting in hilly areas, *e.g.*, *Kashmir State.* The two examples from the South are for complete lorry loads (about 60 maunds) whereas the *Punjab* examples are of bundles weighing about 5 maunds. Thus, it may be observed that for longer distances and for full loads the rates are cheaper than those for shorter distances and smaller loads.

That compared with rail, transport by lorries is on the whole cheaper to the merchants is illustrated by the following example. The data were collected in November 1936.

Costs incurred by motor lorries and rail in transporting a bundle (weighing 4 maunds) of raw hides from Rawalpindi to Lahore.

——	By motor lorry.	By rail.
Time taken to reach Lahore.	10 hours.	4th day.
	Rs. A. P.	Rs. A. P.
Cost of packing	0 4 0	0 4 0
Carriage to station	..	0 3 0
Booking expenses	..	0 4 0
Freight	2 4 0	1 15 0
Clearing and carriage at Lahore.	..	0 4 0
Total ..	2 8 0	2 14 0

The difference in the cost of transport is 6 annas per 4 maunds in favour of motor lorries. But the most important feature of this transport is the saving in time, a factor of great value in the case of hides.

(6) RAIL.

This is by far the most important means of transport employed for carrying hides over long distances. A major portion of the inter-provincial trade is carried by this means and almost the entire stock exported from India, is transported by rail from the up-country markets to the ports of shipment.

(*a*) *Freight charges.*—The freight rates charged on the railways fall into three divisions, *viz.*, class, schedule and station to station rates. All commodities transported by the railways have been grouped into 16 classes and for each class a maximum and a minimum charge has been fixed. The rate for class I is the lowest. This increases as the commodity falls in a higher class. The freight ordinarily payable on a particular commodity is the maximum of the class under which it is included. In actual practice, many commodities, however, are carried at rates substantially below the maximum of the class rate concerned. This is done for promoting traffic or for meeting special circumstances, *e.g.*, competition from alternative means of transport. With the same object in view, station to station or special rates, *i.e.*, fixed freights between two points, are also provided.

Hides, both wet and dry, are included under the 4th class on all the railways in India. The maximum rate for this class is 0·62 and the minimum 0·166 pies per maund per mile. However, as a matter of concession almost all the railways in the country allow hides to be carried in wagon loads (the weights for wagon loads differ on different railways) at lower rates, *viz.*, 2nd class when booked at owner's risk and 2B class when consigned at railway's risk. The maximum rates for these classes are ·42 pies and ·50 pies per maund per mile respectively. The same rates are applicable to both dry and wet hides.

Station to station rates have been provided on several railways for traffic between important markets, particularly between the up-country assembling centres and the ports. For example, there are special rates from *Amritsar*, *Lahore*, *Multan*, *Kasur* and *Gujranwala* to *Karachi Port* (*Kiamari*). Similarly, from *Cawnpore*, *Dacca*, *Kushtia*, *Chittagong*, etc., there are special rates to the various goods yards at *Calcutta*. From *Calcutta* to *Madras* (1,032 miles distance) there is a special rate of Re. 1 per maund for competing with the alternative coastal routes.

(*b*) *Conditions of consignment.*—The railways have provided in their rules that hides are accepted for carriage only if they are "stripped of all flesh and are free from any unpleasant smell". When carried in open wagons they have to be protected by tarpaulins provided by senders. The railways do not allow the use of their tarpaulins, for hides.

The loading of small consignments is done by the railways themselves but when full wagon loads are sent, the wagon is placed at the disposal of the consignor who arranges for the loading of hides. On arrival at the destination the consignee has to arrange for the unloading of his goods. In case railway coolies are engaged, the consignor or the consignee has to pay the charges according to the schedule current on the railways concerned for such service.

(7) COUNTRY BOATS.

Boats are used for transporting hides in the river districts of *Bengal*, *Surma Valley* in *Assam*, *Kistna* and *Godavari* deltas in *Madras*, the back-water areas of *Travancore* and the lake districts of *Kashmir State*. These are also occasionally employed in other parts of the country where navigable rivers or canals exist. Boats employed by rural collectors carry about 10 maunds hides but those which are used for transporting between the markets often carry 300 maunds or even more.

Boat transport is one of the cheapest means but at the same time it is also one of the slowest. Compared with rail and steamer rates, boat freights are generally ½ of the former and 2|3 of the latter. It is reported from *Assam* that the boat hire charged for carrying 15 maunds hides over a distance of about 25 miles is generally Rs. 1-8-0 and it takes nearly 2 days to reach the destination. In *Madras* the average rate for traffic emanating from *Bezwada* to stations like *Ellore*, *Bandar*, *Perikcedor*, situated on navigable canals, works out to 3 annas per maund per 100 miles. In the *Travancore State,* canoes capable of carrying 150 to 300 maunds of hides can be hired for about Rs. 10 over a distance of 64 miles between *Changanecheri* and *Ernakulam.* The returning boats can sometimes be had at rates as low as Rs. 3 to Rs. 5. There is also an out-agency which arranges for the transport of hides and other agricultural produce between *Changanecheri* and *Ernakulam.* For raw hides the charges are as in the table below :—

Boat charges in Travancore State.

Weight limit.	Per maund.
	A. P.
Up to 25 maunds	3 5
25 to 50 maunds	2 8
50 to 100 maunds	2 5
Above 100 maunds	2 4

(8) STEAMERS.

These ply on the coastal routes and the navigable rivers in *Bihar, Bengal* and *Assam.* Most of the hides from *Chittagong* and *Dacca* are carried to *Calcutta* by this means. A good proportion of the *Assam* hides are also sent to *Dacca* and *Calcutta* in steamers. The freights charged for transport by steamers are generally something in between rail and boat freights. There is no restriction about minimum weights or loads. Special rates, *i.e.,* between particular points are also allowed by the steamer companies.

C.—Suggestions for improving the transport by rail.

Several points worthy of attention of the Indian Railways arise from the investigations made during the survey. These are :

(*a*) Hides are ordinarily transported by goods trains and it is very rarely that they are carried by the passenger or fast parcel trains. Thus hides take comparatively long to arrive at their destinations This causes hardship to the merchants and some times the goods also get damaged and deteriorated in quality. For this reason hide merchants have started using motor lorries in areas where they are available. To maintain the traffic by rail it appears necessary to arrange for speedier transport of the hides.

(*b*) At present wet hides are transported at the same rates as dry hides. But since wet hides are heavier and are no less prized by a tanner than a dry piece (at least as far as the substance is concerned), it appears desirable that wet-salted goods should be carried at lower rates than dry hides. By adjusting the charges, traffic in wet hides would increase and thereby the quality of the leather produced would improve. As tanners always prefer to have wet-salted hides, the railways would not, it is expected, suffer financially, because the loss arising from reduction in freights is likely to be offset by increased traffic. Besides, as salt is required for preparing the wet-salted hides, the expansion of this traffic would mean increased transport of salt over the railways. The railways might, therefore, well consider the matter in consultation with the trade.

(*c*) The wagons in which hides are carried are made of iron. These get considerably heated up during summer months. Being highly perishable, the quality of hides transported is thus affected, particularly if the journey takes some days. For this reason, during summer months, wet-salted hides from the north cannot be satisfactorily transported to the tanneries in the south. Besides, the iron plates of the wagons stain the wet hides which reduces their suitability for manufacturing high class leather. It is, therefore, suggested that railways should consider the possibility of providing wagons with wooden floors and sides, for transporting hides. The ventilation also should be improved in wagons used for hide transport.

D.—Special facilities for loading and unloading.

(1) Road transport.

For purposes of loading and unloading, carts or motor lorries are usually taken right up to the shop or godown of the consignor or the consignee. This facility is greatly appreciated by the merchants, as it saves them a great deal of time, trouble, expense and unnecessary handling of goods. The cartage to and from the railway station as well as other incidental charges are entirely saved. This is one of the reasons why merchants prefer road transport to rail transport. Lorries are becoming increasingly popular in certain parts of the country mainly for this reason.

(2) Rail transport.

The railway stations are usually provided with suitable platforms for loading and unloading purposes. At some of the important stations sheds are also provided where consignments awaiting shipment or delivery can be kept for specified periods. These are generally open on the sides with the result that at times the hides are liable to damage by dogs, etc. (See plate II facing page 185). Goods awaiting consignment are allowed to remain at the platform for 24 hours but beyond this period wharfage is charged. The free time as well as the rates vary on different railways. On the North-Western Railway these are 24 hours and 3 pies per maund per day or part thereof respectively but they may vary from station to station. Demurrage is charged when the goods after receipt at the destination are not cleared within a specified period. In case of wagon loads generally 9 hours are allowed free during day light (7 A.M. to 5 P.M.) from the time the wagon has been placed in a position for easy delivery. After that, demurrage is charged at the rate of one anna per hour per ton of the carrying capacity of the vehicle. Similarly, when the wagon is detained beyond 9 hours during day light after it has been placed in position for loading, demurrage is charged at the above rate.

Loading and unloading in the case of small consignments booked at railway risk is done by coolies belonging to the station but in case of wagons, it is arranged for by the parties concerned.

E.—Packing for transport.

(1) By producers and rural collectors.

Hides are generally carried loose (unpacked) from the producers' holdings to the assembling markets. They may at best be tied with ropes but there is no particular system followed in regard to the number of hides put in a bundle. Dry hides are generally folded from head to tail, at the spine but wet-salted hides are folded several times and are made into smaller parcels.

(2) Between markets.

The hides sent from one market to another or to the tanneries are usually made into bundles. The dry stock is usually packed without any wrapping (see plate I facing this page). The weight of bundles differs considerably from tract to tract. In the *North-West Frontier Province*, a bundle weighs between 2 to 3½ maunds. In the *Punjab* bundles weighing 4 to 5 maunds are quite common. About 40 dry kips or 20 buff hides are tied by coir ropes in the *Central Provinces*, to form a bundle. This weighs between 3 and 4 maunds. In case of framed hides, 40 to 50 pieces are tied together and weigh about 2½ maunds (see plate II facing this page). Wet-salted hides are generally transported after being packed in gunnies. Two or three buff hides or four to five kips are placed one upon the other. They are then rolled into a bundle which is packed in a piece of gunny (see plate I facing page 193). The above packing is done in such a way that the most inferior hide acts as a wrapper for other hides, below the gunny bag. The weight of the package varies between 1 and 2 maunds. Sometimes, the bundles may be tied only with ropes and not packed in gunny or mats (see plate II facing page 193).

(3) For export.

Up-country merchants supplying hides to exporters at the ports send their consignments in bundles which are more carefully prepared. The pieces put in a bundle are generally of uniform weight and size and the bundle is pressed mechanically and is secured by means of iron hoops or ropes (see plates facing page 196). The weight of the bale varies considerably with each merchant and ranges between 5 and 10 maunds.

Exporters exercise a great deal of care in preparing the bales. Bales which answer to certain definite standards in regard to weight and size are generally made. The number of pieces of different classes of raw hides to be put in a bale and the weight limits have already been described in Chapter VI under "Hamburg classification". In size, the bales should be up to 40 cubic feet to a ton.

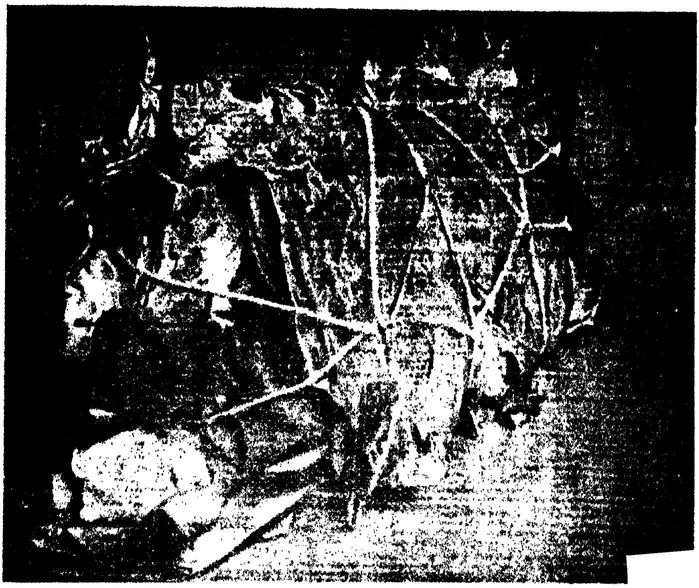


Plate I.—A bundle of *sukti* hides at *Godhra* (*Bombay Province*).

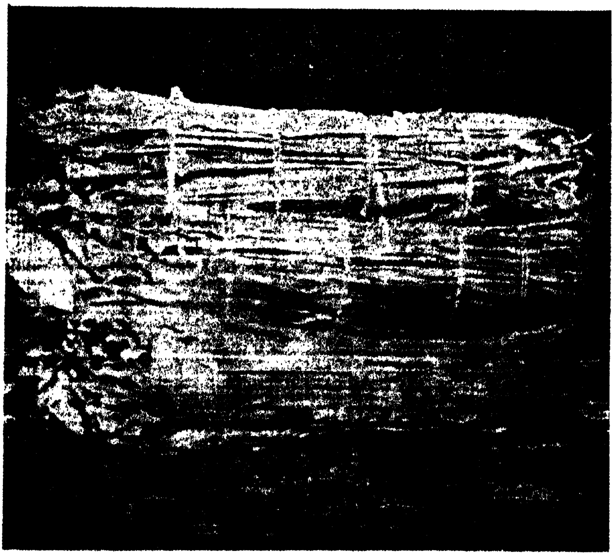


Plate II.—The common method of tying dry-framed hides into bundles.

Facing page 193.]

Plate I. Packing of wet-salted hides at *Akola* (*Central Provinces*) for despatch to *Bombay*.

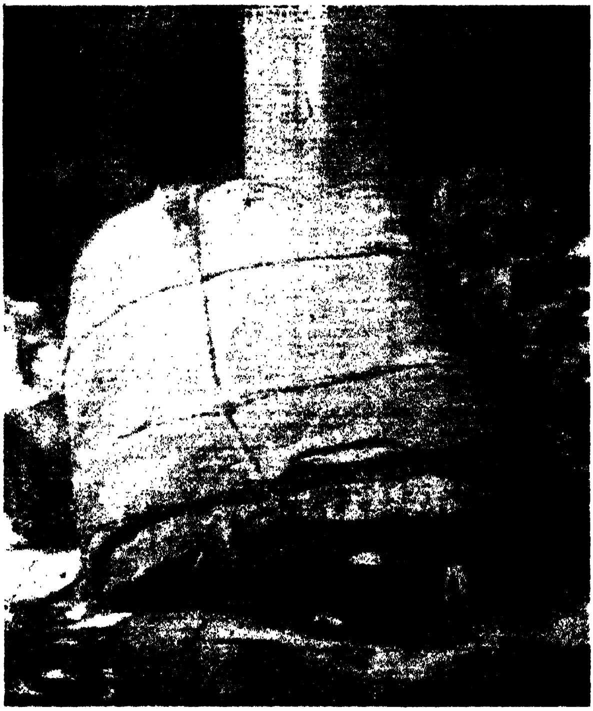


Plate II.—A bundle of wet-salted hides received in *Cawnpore* market.

(4) COST OF BALING.

The details of the cost of preparing a bale of hides as ascertained from a press at *Lahore* (before September, 1939) are given below :—

Details of cost incurred in pressing a bale of hide.

	Rs.	A.	P.
Iron hoops	1	2	0
Gunny cloth	0	8	0
Labour charge	0	5	0
Press hire	2	8	0
Total	4	7	0

Some firms use Manilla ropes instead of iron hoops. Prior to the War, a standard length of rope used to cost about a rupee and was sufficient for 3 bales. The cost on account of securing material is thus reduced very much. The use of gunny is also sometimes done away with and that means an additional saving.

F.—Transport of hides in Burma.

The transport of hides in Burma is done more or less in the same way as in India. Producers who have a few pieces to sell at a time carry the hides themselves to the assembling market or sell it at their holdings to collectors. For transporting over long distances the Burma Railways and the steamers of Messrs. Irrawady Flotilla Company are used. Movement by these means is confined from assembling stations to exporting centres. The railways approximately handle about 80 per cent of the trade and the steamer company about 20 per cent.

For export, the dry hides are made into bales weighing 700 lb. The hides are merely placed one upon the other and tied with strong ropes. No pressing is ordinarily done as the freight is charged on weight and not on the size of the bale.

The wet hides are made into a cylindrical package with the hair side showing on the outside. These are then put in a gunny bag.

INTER-CHAPTER SEVEN.

A major portion of the hides produced in the country undergoes transportation in some form or other and only a small proportion is retained for tanning at the source. Individual *chamars* in rural areas have only a piece or two for sale at a time and, therefore, hides are collected and transported only in small lots in the early stages. Besides, hides are considered " untouchable " practically throughout the country and, as such, are not transported along with other agricultural produce. Both these factors coupled with the perishable nature of the commodity, make collection and transportation of hides difficult and arduous.

Almost all the means of transport used for carrying other agricultural produce are employed for transporting hides. The use of any particular means depends upon the distance to be travelled, the number of hides to be carried, facilities available for quick and safe despatch and upon expenses that have to be incurred. Transport on head-loads is commonly used by producers and rural collectors for carrying 2 or 3 pieces of hides over short distances, *i.e.*, from home to the weekly *hat* or *shandy* or from the producer's holding to the collector's godown. In markets, bundles of hides are carried by coolies on their backs from one shop to another and *vice versa.* Shoulder slings or *bahangis* are also known to be used in *Madras Province, Mysore State* and *Central Provinces.* Although difficult to estimate on account of the work being done by owners themselves, the cost of transport by these two means is estimated to be between 1 and 1½ annas per maund per mile.

Pack animals, camels, mules and ponies, etc., are used practically throughout the country, camels carry about 6 maunds, mules 4 maunds and donkeys about 2 maunds of dry hides each. On account of compactness, more of wet hides can be carried. The cost averages to about ½ anna per maund per mile.

When the quantities to be transported are reasonably large, carts drawn by bullocks, buffaloes and camels are used all over the country. Hand carts pulled by men are used only at markets for carrying small loads of hides from one shop to another. The cost varies in different parts between 1 and 2 pies per maund per mile according to local conditions. This would appear to be slightly higher, compared with charges for other commodities. The reason is that on account of the bulk of dry hides, carts cannot be loaded to the full carrying capacity. In urban areas, the rate varies between 3 and 6 pies per maund per mile.

Motor lorries have become popular for the transport of hides between markets connected by good metalled roads. For short distances, they are even preferred over railways on account of speed, saving in the cartage to and from the railway stations and booking expenses. The rates per maund per mile vary between half and one pie in different tracts and compare favourably with the total expense incurred on rail transport.

For carrying hides over long distances, railways are by far the most important means of transport. A major portion of the inter-provincial trade is carried by this means and almost the entire stocks exported from India are transported by rail from up-country markets to the ports of shipment. When booked at owner's risk, the rate charged for transport by goods trains on almost all railways is ·42 pies and at railway risk ·50 pies per maund per mile. Hides cannot be booked by passenger trains on several of the railways. Special goods rates are also provided from up-country markets to sea ports. The time taken in reaching the destinations by goods trains causes hardship to merchants and, sometimes, the quality also deteriorates. The all steel construction of wagons makes transport unsatisfactory, particularly of wet hides, during summer and often the pelts get stained with iron which reduces their suitability for manufacturing high class leather. Wet-salted hides at present are transported at the same rate as dry hides although the former are much heavier.

Hides are also transported in boats and steamers in areas where navigable rivers and canals exist. Country boats constitute the cheapest means of transport and the rates by steamers are intermediary between freights by rail and boat.

Producers seldom tie their hides and mostly carry them loose, but for transport between markets, they are invariably made into bundles. Dry hides are bundled without any wrapping but the wets are rolled with the hair side showing and packed in gunny bags or mats. The weight, size and shape of the bundles vary very much from tract to tract. Hides for export are packed in machine pressed bales. The number of pieces, weight and size of bales are standardised.

Plate I.—Close view of a press (hydraulic) for baling hides at *Karachi*.

Plate II.—Bales of dry-framed arsenicated hides ready for shipment at *Karachi* port.

Plate I.—Rather an uncommon method of storing hides, practised in the *Deccan* and parts of the *United Provinces*.

Plate II.—Storage of hides in a verandah at a larger godown in *Calcutta*.

CHAPTER VIII.—STORAGE.

A.—General.

Hides are highly perishable and putrescent goods. Unless special precautions are taken, storage reduces their weight, deteriorates the quality and thereby diminishes their market value. Consequently no agency in the course of their movement from producer to tanner or exporter ever desires to stock them for any length of time. Besides there is always the risk of an adverse price fluctuation. To reduce the period of storage, attempts are always made to dispose of the stock as quickly as possible, even at a smaller margin of profit. In spite of all this some storage becomes inevitable during the movement of hides from one agency to another, before they reach the tanneries or exporters.

The period of storage differs with each party and depends upon a number of factors such as the type of hide, the nature and efficiency of its cure, the season and the trade demand, the tanning programme in case of tanneries and the availability of shipping space in case of exporters. Superior assortments, properly cleaned and cured, stand storage better than the inferior goods. Dry hides keep longer than wet-salteds, and dry "arsenicated" goods can sometimes be kept even for a year or more. On account of heat and humidity, stocks deteriorate more quickly during summer and monsoon months than during winter.

The trade demand is one of the most important factors affecting stocks as well as the period of storage, particularly with wholesale merchants. During slack periods, there is little turnover but the production continues to be carried to the markets as none of the rural agencies ordinarily possesses facilities or finance for holding the hides for any length of time. Prices are unduly depressed and the merchants purchase and store them. Thus their stocks swell as also the period of storage is prolonged. During brisk periods, the stocks as well as the time are shortened.

It has been noticed that in a market which receives say 1,000 hides per day, the stocks with the merchants may vary from 10,000 to 75,000 pieces.

B.—Methods of storage.

(1) PRODUCERS.

Dealers in the towns and cities buy outright all the green hides produced at the slaughterhouses and put them to different types of cures almost immediately. Therefore, urban producers (butchers) do not have to store hides at all. Village *chamars* also do not normally store their goods for any length of time. This is because they are always in need of cash. Soon after flaying, they take their hide to the nearest village market or they sell it to a *beopari* on their own holding. Sometimes they even accept a few annas less than the market price in order to get rid of the piece quickly. If the village is far from any market or if rural collector is not available and the producer is unable to dispose of his hide in the green state, he dries it in the sun so that putrefaction may not set in. In any case, village producers do not generally retain the hides for more than a week or so during winter and for a still shorter period during summer.

The small stocks with rural producers, which seldom exceed half-a-dozen pieces are kept in a corner of their house or on the cross beam, under the roof. In some parts of the *United Provinces* and *Bombay Province* village producers keep their stock on branches of trees, in front of the house (see plate I facing page 197).

(2) RURAL COLLECTORS.

Beoparis who go about collecting hides from village to village and who also purchase them in weekly or bi-weekly *hats* or *shandys,* send their collection to town merchants within a week or a fortnight. Meanwhile they stock the hides in a room or verandah of their house or in an adjoining building. In the *United Provinces,* collectors store for short periods in open huts which may be made available to them at a nominal payment to the village headman. In the *Central Provinces*, collectors keep stock of dry hides to the extent of a cartload or two, for about a month. For this they hire suitable godowns. In parts of this province where no roads exist, collectors are known to keep during rains stock of dry hides in thatched houses for nearly three months.

(3) TOWN MERCHANTS.

Village *beoparis* bring or send their stock to the town merchants. Hides from the local slaughterhouses also pass on to them. These merchants have their own godowns which are generally located in the outskirts of the town, where rent is cheap. In *Mysore State*, hide merchants have to take out licenses, and the storing of hides near residential quarters is not permitted.

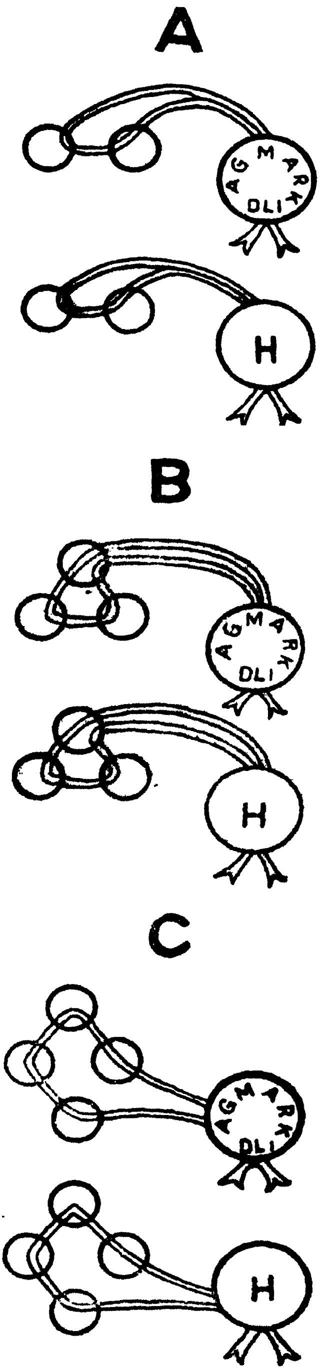
The godowns of the town merchants usually have a curing yard attached, where the local hides as well as those obtained from villages are cleaned and cured. In many cases only open storage yards are provided. Thus hides become subject to damage by vultures and stray dogs.

Town merchants dispose of their stocks to wholesale merchants in larger markets. They do not generally keep the dry hides for more than a month and the wet ones for more than 8 to 10 days Their usual stock is about 1,000 pieces but in many places it may be much smaller.

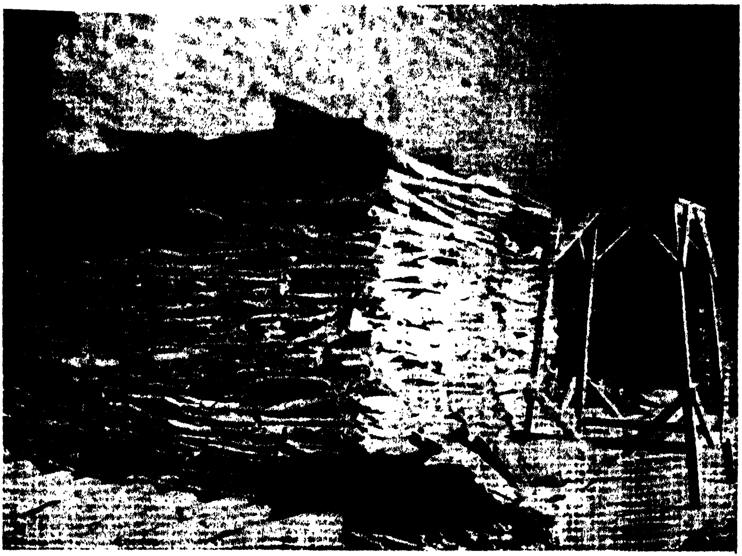
(4) WHOLESALE MERCHANTS AND EXPORTERS.

As already seen in Chapter V—Assembling and Distribution, most of the hides from the districts are passed on to wholesale merchants at cities and ports. Naturally these merchants have large godowns and establishments for storing hides. It is here that hides are kept for sufficiently long periods—extending from a fortnight to a few months or even a year depending upon the circumstances. The godowns are generally *pucca* and have large verandahs (see plate II facing page 197). It has also been noticed that they are

[Facing page 198.



Grade designation marks for hides and the method of marking.
[For reference see page 162.]



Storage of hides on wooden sleepers in a shipper's godown at *Karachi.*

generally located in one part of the town. Differently cured hides are kept in separate lots. The superior assortments of each type and cure are sorted and stocked separately. Sometimes planks or bamboo matting may be spread underneath the hides, to protect them against dampness (see plate facing this page). The hides are piled up in heaps which are not made very high as the chances of heating and fermenting are greater in high heaps. An experienced staff is maintained for looking after the stock. The piles of wet-salted hides are turned once a week during winter and twice during summer and monsoon. More salt is also applied, if necessary. Piles of dry and semi-dry hides are also frequently turned and examined. Each dealer's lot is separately stacked until it is sold.

The stocks carried by a wholesale merchant vary considerably from time to time depending upon the position of supply and demand. They often carry stocks up to 10,000 pieces or more.

C.—Note on the godowns of wholesale merchants.

The merchants' godowns, office and sometimes his residential quarters are all combined in one premises. The godown generally comprises a large piece of land walled on three sides. On the fourth side there is a large gate which constitutes the only entrance to the godown. The gate is usually wide enough to allow loaded bullock carts and lorries to pass in and out of the godown. Near the gate, are situated the offices and a few living rooms, usually for the use of outside merchants who may be visiting the firm. The rest of the space is taken up by preparing and unloading yards and rooms for the storage of hides. The size and construction of the godowns are often an index of the extent of business and prosperity of the merchants.

D.—Costs of storage.

The village producer naturally does not incur any expense on storing the few hides which he keeps in his own dwelling house. The rural collectors or *beoparis* have, however, sometimes to rent houses in villages. In rural areas rooms capable of holding say about 500 pieces can be rented for less than Rs. 2 per month. In most of the towns also, cheap godowns are available. In the *Punjab* towns, a godown capable of holding say 1,000 hides, can be usually hired for Rs. 5 per month. In *Bengal*, a room measuring 15′ × 30′ with a curing yard of about 30′ × 60′ can be generally hired for Rs. 8 per month. A hide godown in *Mysore State* can be had on Rs. 2 to Rs. 5 per month.

In cities, the rents are high. At *Peshawar* a godown having two verandahs and 3 or 4 small rooms costs Rs. 40 to Rs. 50 per month. In the *Punjab* cities, the rent of a godown capable of holding 1,000 pieces ranges between Rs. 25 to Rs. 50 per mensem. In *Calcutta* a godown having a 25′ × 40′ room for storage and a curing yard of about 80′ × 80′ costs on an average Rs. 100 per month. Some of the godowns in *Calcutta* are very spacious and their rent is as high as Rs. 200 per month. Some of the important shippers also possess their own godowns.

INTER-CHAPTER EIGHT.

On account of the perishable and putrescent nature of hides, no agency in the course of their movement from the producer to the consumer, ever desires to stock them for any length of time. Storage reduces their weight, deteriorates the quality and thereby diminishes their market value. In spite of all this, some storage becomes inevitable at the different stages of marketing. The period of storage differs with each agency and depends upon the type of hide, the nature and efficiency of its cure, the season and the trade demand, the tanning programme in case of tanneries and the availability of shipping space in case of exporters. Superior assortments, properly cleaned and cured, stand storage better than inferior goods. Dry hides keep longer than ' wet-salteds ' and ' dry arsenicateds ' can be stored for even a year or more. On account of heat and humidity, stocks deteriorate more quickly during summer and monsoon months than during winter.

Chamars and butchers dispose of their hides almost immediately after production. In case a buyer is not readily available, rural producers may have to store a few pieces for a short time, which they keep in a corner of their house or on the cross beam under the roof. In some parts they may keep the dry hides on branches of trees near their houses.

Rural collectors and town merchants store hides from a week to a month which is generally the period during which they send their collection to the commission agents for sale. They usually have a small curing yard and store for keeping the hides.

It is at the godowns of commission agents and wholesale merchants in big markets and of tanners and exporters that raw hides are kept for any appreciable length of time. Here also, endeavours are always made to dispose of or use up the stock as quickly as possible. The period of storage in their case varies between a fortnight and three months and, in rare cases, may extend up to a year or more. With big merchants, the stocks vary between 10,000 to 75,000 pieces. The godowns are *pucca* and the hides are stored after sorting on wooden planks, mats and gunnies.

CHAPTER IX.—REORGANISATION OF HIDE MARKETING.

A.—Conditions that call for reorganisation.

Raw hides are the basic material for the making of leather. In India, apart from the demand for hides from those who have chrome or vegetable tanneries in the country, there is an appreciable demand for hides from the shippers for exporting in raw or tanned condition. Tanning is an industry with several specialised branches and, like other such industries, requires different types and qualities of raw material to enable the tanners to obtain economically and precisely the various types of leather they wish to manufacture. For instance, tanners who make chrome leather for uppers and other light goods, require light or medium weight kips possessing a fine grain with as few defects on the hair side as possible. Larger size pelts of compact substance also form a part of their requirements. The chrome tanners do not object much to superficial flay marks, etc., as the leather is not expected to undergo much tensile strain. On the other hand, bark tanners of sole leather require heavy buffalo hides of uniform thickness. Sole leather is heavily tanned and is compressed and superficial defects are no serious detriment. Therefore, to some extent, the defects in the hide are disguised. Tanners of harness leather or those who make mechanical leather, such as beltings, picking bands, etc., do not tolerate even shallow flay cuts and require uniformity in thickness and good texture throughout the hide. Those who tan or dress hides for export, namely, Southern India bark tanners, are able to use various qualities of light and medium hides, as before shipment they can classify tanned goods in a variety of grades (over 6 in number) and consequently have a wider scope for the purchase of raw hides. They, however, require very few buff hides. Lastly, shippers of raw hides make up their consignments according to the requirements of foreign buyers, for, after all, they form only a link between the hide trade in this country and tanners abroad. If their hide indents are for the making of, say, chrome kip leather, hides which can produce that kind of leather most economically, are in demand. But shippers generally have to purchase all types of hides although they exercise a certain discrimination in the matter of cure. For instance, they do not normally go in for wet-salted hides.

The above shows the peculiarities in the utilisation and requirement of hides from the various buyers. It has, however, already been discussed in the chapter on "Quality and Grading of Hides" that many factors, some natural and others controllable, govern the quality of the hide and the use it could be put to. Pelts of two living animals may be identical in quality and value, but due to differences in subsequent handling and cure they may be rendered unsuitable for the same purpose and may, therefore, fetch markedly different values. The different quality factors, therefore, necessitate constant sorting of hides by all intermediaries, between the producers and the tanners. But the most surprising and deplorable feature of this sorting is that the internal trade in India does not follow recognised grade standards and each person sorts the hides according to his own notion of the subject. The personal interest of the selecting party also plays quite a considerable part in this. The statutory grade standards under the AGMARK scheme exist only for the grading of green slaughtered hides at the slaughterhouses. But the limitation of the utility of grading hides at these centres has already been discussed in the chapter on " Quality and Grading of Hides ".

When it is considered that there are so many intermediaries who do the so-called sorting more or less in a domestic manner (without ever marking the hides or bales), the difficulties of the tanners and shippers to place any reliance on this sorting or to plan their purchases with any degree of satisfaction or efficiency, can be well understood. At present, it is not uncommon for a tanner in *Madras* to send his own man to a distant place like *Dacca*, in *Bengal*, to examine each hide before purchasing it on the spot. Perhaps in no other country the tanners have to make such arrangements for getting raw hides. This disorganised state of marketing for the majority of hides in India leads the trade nowhere and has been the cause for jeopardising the progress of the tanning industry to a considerable extent. Most of the leading and old tanners claim that the difficulties of finding a market for finished leather are not one-tenth as vexing as those of finding supplies of suitable raw hides. As already pointed out in the chapter on " Supply ", the export trade in raw hides, too, has dropped considerably during the past 10 or 15 years. In this connection the opinion of an experienced person, who was in-charge of the purchasing department of one of the largest tanning concerns on the Continent and who has had occasion to compare hides received from all countries of the world, is of interest. He considered that the greatest defect in the Indian hides was the lack of uniformity in the goods, or in other words, absence of grading was conspicuously marked in most of the consignments. For instance, it was a common occurrence to find fallen hides in consignments charged for in the invoice as " Dacca slaughtered cow hides ". Besides, all the hides in the consignment may not be of " Dacca " type.* Redress in the matter, through lengthy correspondence with the trade in India, was not always successful. Continental buyers to some extent had to give up the purchase of Indian hides due to lack of uniformity and selection, although, in the opinion of the person referred to above, hides from no other country could compare with the Indian hides, for making particular types of light leathers.

At present, the trade is so universally disorganised that it is rather difficult to lay the blame for the above state of affairs at any particular door. The charge of carelessness in shipments is often retorted to by saying that buyers abroad require cheaper goods and do not always pay the prices commensurate with the quality. Be it what it may, there is little doubt that at present the persons concerned

---

*** Complaints of a similar nature have been received in the case of export of skins and wool also. For instance, all the " Amritsari " skins may not always be true to type. Similarly, bales of wool marked " Superfine Bikanere " may contain hairy wool from the East or South India.**

have developed a kind of inertia and it has become no one's business to attend to matters relating to the improvement of this trade. Butchers and flayers feel that it is no use taking care of the hide or flaying it properly, since all hides would be purchased in bulk and better pelts would receive no premium. Hide buyers at slaughterhouses think that under the present inefficient system of flaying and selling of hides covered with blood, flesh and filth, it becomes difficult to judge the quality or its weight, and so the undesirable practice of purchasing the hide while the animal is still alive has become popular at many centres. Unfortunately, curers too have become indifferent to the important service they should be rendering to the trade. In the first place, there is no agency to show them the improved methods, and, secondly the need for proper curing is seldom impressed on them, as all the good, fair and indifferently cured hides find their buyers somehow or other. Actually, in the absence of any recognised and controlled system of grading of cured hides, various malpractices have crept in and these have further worsened the conditions. Loading of hides with extra quantities of salt and even mud to make them heavy and disguise the defects, passing of dead hides as slaughtered ones and passing of inferior hides as superior quality goods are only a few examples of the frauds with which buyers and sellers are confronted almost every day. When a consignment comes to the *arhatdars* or commission agents, some of them no doubt try to sort the hides, according to the requirements of the buyers. But, as has been said before, this sorting is purely empirical. If the demand is keen and prices run high, there is always the tendency to include rejections with higher grades. On such occasions the buyers too, are said to relax their expectations and do not raise much objection. But even under normal conditions, the day to day variations and the variations between *arhatdars* of the same market in selections are so wide that tanners or shippers have always to keep in mind the large risks involved in quoting for and purchasing hides from the open market. This vicious circle unfortunately operates continuously and the trade suffers in reputation, prices, quality, mutual trust, expansion of market and in all matters that are conducive to progress.

The above is the present state of the hide industry and it is rather a sad commentary that it should prevail in the case of a commodity of such potential importance to the country, alike in times of peace and war. It is obvious that if this trade, the annual value of which amounts to several crores of rupees, is to be put on a sound footing, reorganisation and control, jointly by the trade and Government, are called for. Recent informal discussions with the trade have clearly indicated the need for taking early action in this direction. In the sections below, the proposed lines on which the reorganisation can be effected are discussed.

B.—Stage at which control should be enforced.

In the absence of large abattoirs, the production of hides in the initial stages takes place on a very small scale. Accordingly, the number of hides collected at a centre, including even the hides from the surrounding villages, is generally so small that any control at this stage would not be normally feasible. It has been already experienced that even at some of the larger slaughterhouses where the production of hides is anything up to 250 pieces per day, there are so many petty merchants that hides get distributed widely with the result that the benefits of grading and marking are hardly felt by the trade in general. These conditions suggest that control should be enforced at centres where a fairly large number of hides are collected or assembled. Further, it is also obvious that if any control is to command the confidence of the trade, particularly the buyers, it has to be effective and properly enforced. This evidently means the setting up of a reasonably well paid and dependable Hide Inspectorate. But the expense connected with such a scheme can only be met if the number of hides that pass through it is large enough. It seems, therefore, that control could best be enforced at large terminal markets where the hides from different areas (far and near) are assembled for sale through the commission agents, and where the buyers also may have their purchasing organisations. A list showing such centres and the approximate number of hides handled there daily is given in the table below. The approximate annual value of the trade is also given to show the relative importance of the centres.

Assembling of hides at the main terminal markets.

Name of place.	Number of hides assembled daily.	Annual value of trade at Rs. 5 per hide.
		Rs. (lakhs).
Calcutta	11,000	201
Cawnpore	9,000	164
Madras	3,500	64
Karachi	2,500	46
Dacca	3,000	55
Bangalore	1,500	27
Bombay	1,500	27
Lahore	1,500	27
Chittagong	1,000	18
Delhi	700	13

Besides the above 10 centres, there are also at least 25 comparatively less important centres, where hides are assembled. These are *Agra, Ahmedabad, Amritsar, Bareilly, Benares, Bezwada,* *Bhopal, Cuttack, Darbhanga, Dindigul, Ellore, Godhra, Hyderabad (Deccan), Hyderabad (Sind), Jubbulpore, Jullundur, Lucknow, Nagpur, Nasirabad Peshawar, Raichur, Ranchi, Rungpur, Sambalpur, Sholapur, Sialkot* and *Sukkur*. At these places 300 to 500 hides are assembled daily and the value of the trade at each place may be in the vicinity of about Rs. 5 lakhs per annum.

C.—Type of hide control necessary.

In deciding upon the type of hide control, it is important that the trade itself should bear almost all the responsibilities of following properly the quality specifications for marking and grading each hide that passes through the control. Government's interest can be only of a supervisory rather than of an executive character.

In the case of grading and marking of agricultural produce in other countries, or in India under the Agricultural Produce (Grading and Marking) Act, 1937, the normal procedure is to authorise suitable individuals or firms the use of a recognised government mark, for certifying produce which satisfies certain quality specifications. For this purpose a permit under the Act, called the Certificate of Authorisation is issued by the Agricultural Marketing Adviser. The marking of the produce, say, with the AGMARK, assures the buyers that it was open to Government inspection at the time of marking or packing. The system in India is purely voluntary and the authorisation is normally renewable every year. On precisely the same basis, the use of AGMARK could be allowed to approved commission agents of hides. It is, however, felt by some sections, particularly the commission agents themselves, that such a system, by itself, would not be enough for the grading of hides. They claim that in the early stages only a few parties at a place could be induced to adopt the scheme. The others would continue to operate outside the ring and do business in the usual way. This would not only foil the efforts of those who wish to put hides on the market according to quality specifications, but the general progress of the scheme would be hampered and there would be no improvement over the existing scheme of grading at the slaughterhouses. It is, therefore, proposed that at some centres the entire hide trade should be controlled and all the hides should be graded and marked.

The procedure suggested for this is that the sellers of each place should be registered and should become the members of a Registered Hide Sellers' Association. This body would normally consist exclusively of commission agents and all of them operating in a market should be members of the Association. The Certificate of Authorisation for the grading and marking of hides should be issued individually to all the members but their names would be forwarded to Government through the Registered Hide Sellers' Association. The Association would have its bye-laws and would possess a board of management, elected from its members.

The Provincial Marketing Officer should make enquiries and if some of the commission agents at a centre are agreeable, he may request the Collector of the district, where the market is situated, to notify the proposal. At the time of doing this, the names and numbers of the recognised commission agents operating at the market should be mentioned. A time limit of three months may be given. If, during this period, 50 per cent of the commission agents signify their consent to join the association, the association shall be registered forthwith and the remaining 50 per cent shall have to become its members. If, on the other hand, the response has not been satisfactory, the local government should have the power to declare that market as a controlled hide market and the commission agents would have to become members of the Sellers' Association of that place. It would be imperative for all the members of the association to sell the hides only after grading and marking them according to the various schedules.

In the above connection, it is necessary to examine the existing legislations, which may be used for improving the quality and stabilising the hide trade. The Agricultural Produce (Grading and Marking) Act, 1937, is a purely voluntary Act and although improved marketing of other commodities has progressed under it, its full advantage has not been availed of by the hide trade. Under Section 19 of the Sea Customs Act, 1878, the quality of the articles of export (or import) only, can be controlled. Under that section of the Act, the Governor-General in Council may, by notification in the Gazette of India, prohibit or restrict the export by sea or land, of goods of any specified description. The " specified descriptions " could be so worded that they would prohibit the export of all hides, unless they were graded and marked in accordance with certain specifications. But this provision cannot be used to improve matters so far as the internal trade is concerned.

The best method of controlling the internal trade seems to be to make use of Regulated Markets Acts. These are already in existence in the *North-West Frontier Province*, the *Punjab*, *Sind*, the *Bombay Province*, the *Central Provinces* and the *Madras Province* as well as in the States of *Kashmir, Baroda, Bhopal, Gwalior, Hyderabad* and *Mysore*. In the other areas, it is understood that appropriate Bills for passing similar Acts are under consideration. In certain areas, hides are not yet included in the schedule of commodities in the Act, but this could be done by a notification or a suitable amendment. The object of these Acts is " to provide for the better regulation of the purchase and sale of agricultural produce and the establishment of markets for it ".

Under the provisions of the Markets Acts, no commission agent can operate at a hide market unless he is licensed by the government. And one of the conditions in the licence can be that all hides should be properly graded and marked. Through this system of control at a market, the quality of hides can be . improved within a measurable distance of time. For instance, the rules may not allow the " loading " of hides, either with salt or any other matter and a fine can be imposed on the merchant who consigns to the market " loaded " hides. Similarly, penalty could be imposed on poorly cured or flayed hides or they may be classed into the lowest grade

The practical effect of this would be at once felt by producers and petty dealers, who generally consign the goods to the commission agents at the larger markets, and they would take heed to improve matters. Thus, by controlling the terminal markets, matters at the production end would automatically improve.

The above scheme has been prepared on the basis of certain ideas expressed to the Central Marketing Staff by some members of the trade including both tanners and shippers during the course of the survey. It is, however, suggested that before putting it up to the provincial governments for adoption, a conference of representatives of hide merchants, tanners and shippers should be convened to discuss the scheme.

D.—Organisation of buyers not necessary.

If regular and large consignments of well selected and marked hides, according to known grades, could be put on the market by the sellers (commission agents), it is obvious that tanners and shippers would welcome the above procedure as one of great help to their trade. In fact, it is a feature which no progressive element in the trade could let go unsupported. Further, as suggested in a previous section, if the control is enforced at, say, the first 10 important terminal markets for hides, buyers can have no alternative but to purchase their requirements in the shape of graded hides from these old and well established centres. Having such facilities as these, they would not normally be expected to draw supplies of ungraded hides from other smaller markets. Therefore, there does not appear to be any need for organising the buyers simultaneously, unless they themselves wish this to be done or a need for their organisation arises at a later stage.

E.—Classifications for grading the hides.

The detailed specifications for hides of various types will depend upon a close study of a few consignments of differently cured hides available at each market. The tentative specifications should thereafter be discussed at a trade conference and hides graded accordingly should be available for the inspection of the members. In the following paragraphs only the general basis of grading can be indicated.

It has been pointed out that the various branches of the tanning industry, *i.e.*, the chrome tanners, the bark tanners, the *Madrasi* or the South Indian tanners, require hides of different types, qualities and cures. For the purchase and valuation of hides, they adopt their own system of grading. Some of them classify the hides as " Seconds ", " Rejections ", " Double Rejections ", " Triple Rejections " and " Double Triple Rejections ". Shippers have also evolved a grading system of their own, known as the " Hamburg classification ". This is exclusively applicable to air-dried and dry-salted hides. In this system differentiation is made according to the region of production and cure. The regional qualities are covered by types known as, " Daccas ", " Real Meherpores ", " Meherpores ", " Agras ", " North-Westerns ", " Darbhangas " and " Patnas " in kips, and " Agras ", " Daccas ", " North-Westerns ", " Purneas " and " Darbhangas " in buff hides. Under these are specified the cures, *e.g.*, the " Salted ", " Arsenicated ", " Uncrumpled " or " Crumpled ". Weight limits, generally three, are also prescribed for light, medium and heavy hides. Under each regional type and cure, several qualities or grades are prescribed. For example, under " Arsenicated Agra Cow Hides ", six grades or qualities are specified as under :—

AACCS .	Arsenicated Agra Commissariat Slaughtered.
AACS .	Arsenicated Agra Slaughtered.
AAS .	Arsenicated Agra Slaughtered No. II.
AACD .	Arsenicated Agra Deads.
AACR .	Arsenicated Agra Rejections.
AACRD .	Arsenicated Agra Double Rejections.

The above system of classification is, to a large extent, cumbrous. For the proposed grading of the hides in the godowns of the merchants, it would be desirable to adopt a comparatively less complicated system. This could be done by confining the classification to the 4 main types of cures and reducing the number of grades in each cure to only 4. The weight limits should also be 4 in each grade, but the range in each will depend upon the type of cure. Further, there should be no separate classifications for slaughtered or fallen hides, but kips and buff hides should be handled separately as at present. The tentative basis of the proposed grading is given below :—

Tentative basis of classifying the hides for grading at the godowns of the commission agents.

Class.—Wet-salted ; Dry-salted ; Dry-framed and *Sukti*.

Grades.—Primes ; Seconds ; Thirds and Rejections.

Weight groups.—Heavy ; Medium ; Light and Calves.

The specifications for the different grades should correspond generally with those given under the Agricultural Produce (Grading and Marking) (Hide) Rules, 1937, on the basis of which over 7 lakh hides from the slaughterhouses have already been graded. These specifications cover, however, the intrinsic qualities of the pelt itself, but for evaluating the cure, special specifications will have to be drawn up after a study of cured hides.

By adopting the above fairly simple and straightforward method, it would not only be possible to cover all types and cures of hides, but the various sections of the trade will be able to draw their requirements of the right type of hides without much wastage. For example, chrome tanners may order packs of medium weight primes or seconds wet-salted kips. Tanners of harness leather may indent for packs of heavy weight prime wet-salted buff hides. *Madrasi* tanners may order their requirements from a large choice of graded hides. The identification of the regions of production or type, *e.g.*, " Dacca ", " Agra ", etc., may be left out for the time being. In any case, it would be very difficult to vouchsafe the correctness of the marking, should a dispute arise. The original place of packing may, however, be marked on the bales of hides.

F.—Hide Inspectorate and cost.

The table on page 205 shows the magnitude of the trade at each of the important assembling markets. At *Calcutta* and *Cawnpore* respectively, approximately Rs. 2 and 1·6 crores worth of hides are handled annually. At other centres, the volume of trade is comparatively less, yet it is of considerable importance. This shows that there is a case for setting up an efficient Hide Inspectorate. The importance of maintaining proper efficiency in the inspection needs hardly be emphasised. It is only when the scheme can inspire confidence in the sellers and buyers that they can be expected to abide by its decisions or contribute towards its cost.

It does not appear necessary to have different types of organisations at the various centres and a standard type of inspectorate should do well at most places. At each important centre, there should be an experienced officer in charge of the scheme, to be called the Hide Inspector. He should be provided with a proper office and clerical staff. Under him, there shall be a number of Grading Supervisors, who must also be fully experienced in the grading and selection of hides and should be capable of commanding respect from the trade. Under them, there shall be skilled Selectors who should be selected from the godowns of the merchants. At each place there should also be an Advisory Committee of three persons appointed by the Registered Hide Sellers' Association. This body shall act as arbitrator in case of disputes of a technical nature, between the Hide Inspectorate and the holder of a Certificate of Authorisation.

The number of Grading Supervisors and Selectors shall depend upon the number of hides handled at each place. But an indication of their strength could be given if it is assumed that at least 25 per cent of the hides graded and marked at a place by the holders of the Certificates of Authorisation must be checked by the Hide Inspectorate. Thus at *Calcutta* and *Cawnpore,* out of 10,000 to 12,000 hides proposed to be graded daily, 2,500 to 3,000 hides shall be checked. The checking should be planned to cover uniformly all the parties operating at a centre and 25 per cent average should be worked out on the weekly total graded by a party. The experience of grading at the slaughterhouses has indicated that one grader or selector can grade and mark about 250 hides in four hours with 3 or 4 helpers, who merely handle the hides. In the case of slaughterhouses, all hides should be initially graded and marked. On the other hand, in the case of checking at the godowns, the hides would be already sorted out into different packs. If the merchant has had the job done well, the task of checking would be comparatively easy and would take less time. But, notwithstanding these facts, it may be said that a selector should not be expected to grade, in a day of 8 hours, more than 300 hides. This should give him ample time to check each hide carefully and should leave no excuse for incorrect grading.

On the above basis, for *Calcutta* or *Cawnpore,* approximately 15 hide selectors would be needed. It would be desirable to give opportunities to these men to get specialized in a particular branch of selection or grading. For instance, a few selectors should specialize in grading of *suktis* only, while others may become specialized in the selection of dry-salted or wet-salted goods. They would then be able to detect easily all the flaws in the quality of a particular type of hides. The work of three selectors would be supervised by one grading supervisor. The selectors would be responsible for initial and correct checking of each piece of hide they handle and the latter officer shall be responsible to see that the selectors do their job efficiently. Thus at each of the above-named market, there shall be 5 Supervisors. The godowns of the merchants should be grouped. Each group may have 2 or 3 godowns, according to the number of hides handled by each and their location. For instance, at *Cawnpore,* there are nearly 80 *arhatdars* godowns and these may be divided into, say, 30 groups. Each grading supervisor shall have 6 groups under him but he should supervise them in turns so that one officer does not operate in the same group for more than two weeks or a month at a stretch. The Hide Inspector shall be responsible for the correct working of the scheme and maintaining proper discipline and efficiency among the staff.

Considering the responsibility each member of the staff will be required to shoulder, it is essential that they should be well paid. At present, the hide selectors at the godowns of the merchants, commonly known as *jachandars,* are paid Rs. 25 to Rs. 30 per month. In order to attract good men for taking up the appointment, the salary of this post should not be less than Rs. 40 with an annual increment of at least Rs. 2. The Grading Supervisors should be educated persons and must possess enough experience of the hide trade. Graduates in leather chemistry or technology should be given preference, as, with such scientific background, they could pick up the technique of hide grading very soon. The pay of these posts should be at least Rs. 200 per month with an annual increment of Rs. 10. The Hide Inspector should be paid at least Rs. 750 per month to attract a suitable man to accept the appointment. He should be well-versed in the hide trade and must have experience of purchase and sale of hides. The members of the Advisory Committee, whenever they are required to meet, should be paid an honorarium of Rs. 10, if they meet for more than half-an-hour at a time. The Inspectorate should have ministerial staff for maintaining records and correspondence. This expenditure is expected to be about Rs. 300 per month. Assuming that the Advisory Committee consisting of 3 persons are required to meet once a week, the monthly expenditure on this account would be about Rs. 120. The total annual expenditure of the Hide Inspectorate, including the honorariums of the Advisory Committee would thus be approximately Rs. 33,500.

At a market where about 10,000 hides are graded and marked per day, *e.g.*, that of the size of *Calcutta* or *Cawnpore* and where the Hide Inspectorate checks up at least 25 per cent of these, to see that the grading and marking has been done correctly, on the basis of above estimates, the cost of quality inspection and control amounts to only 1 anna per 6 hides handled and graded.

It will be appreciated that for this negligible cost, sellers will be able to put on the market, hides graded, marked and certified according to statutory quality specifications. The work of the buyers would be considerably simplified ; they would be able to order these goods with very much less risk than at present. The merchants who would be taking to grading would not be spending anything extra on staff as most of them possess the *jachandars* and are themselves capable of following the specifications. The marking itself would cost very little, as the hides would merely be punched and only the bales would be identified with printed rubber tabs.

As *Calcutta* and *Cawnpore* are the two most important hide assembling centres both for the internal and export trade, it is recommended that the hide markets at these places should be regularised in the first instance. Unfortunately, neither in *Bengal* nor in the *United Provinces*, have the Markets Acts been passed yet, although the respective bills are already before the legislatures. On the passing of the Acts, the above scheme should be taken in hand forthwith.

As the Certificate of Authorisation for grading and marking the hides will be issued by the Agricultural Marketing Adviser, he cannot be absolved from the responsibility of seeing that the AGMARK is correctly used. It is, therefore, imperative that, for maintaining a proper quality control, there should be an efficient and well experienced Hide Supervising Officer on the Central Marketing Staff. He should be a fully qualified and responsible person so that his decision can be accepted final in all cases of dispute.

INTER-CHAPTER NINE.

Tanning is a specialised industry requiring different types and qualities of raw hides for the precise and economic production of various types of leather. Shippers, too, who form only a connecting link between sellers in this country and the tanners abroad, have to make their purchases according to the specific requirements of foreign buyers.

Although some kind of sorting is constantly done by the various intermediaries between the producers and ultimate buyers, grading is not done according to any specified or recognised grade standards. The operation is carried out more or less in a domestic manner, and the difficulty of tanners and shippers in placing any reliance on such sorting or in planning their purchases properly can be better imagined than described. This disorganised state of marketing in respect of the majority of Indian hides works in a vicious circle and has been the cause for jeopardising the progress of the country's tanning industry to a considerable extent. Most of the leading and reputed tanners claim that the difficulties of finding a market for finished leather are not even one-tenth as vexing as those of obtaining supplies of suitable raw hides. Foreign buyers also make the same complaint apart, *i.e.*, the lack of uniformity and the absence of proper grading in Indian consignments.

It is difficult to lay the blame at any particular door, but there is little doubt that matters have now reached a stage when some bold step must be taken. The trade has been suffering in reputation, prices, quality and mutual trust. But for the abnormal demand caused by the War, India would have had perhaps to face the possibility of losing important markets. To put the trade on a sound footing, therefore, reorganisation and control, jointly by the trade and Government, are called for.

Hides are produced and marketed in the early stages in small lots and it is only at the larger terminal markets that the number is sufficient enough for the exercise of an effective and economic control. The main markets are *Calcutta, Cawnpore, Madras, Karachi, Dacca, Bangalore, Bombay, Lahore, Chittagong* and *Delhi.* At these centres, large commission agents and important buyers, both for local use and export, also have their purchase offices. A preliminary examination suggests that, to be effective control should be enforced at these centres in the first instance. Other markets, which number about 25 and have an annual business of more than Rs. 5 lakhs each, may be added to later.

The suggested control is to grade and mark all hides according to some statutory grades, say, the AGMARK grade specifications. The responsibility for the work should rest with the trade, and Government's interest should be only of a supervisory character. The procedure suggested for this is that all sellers of a place should be registered and should become members of a Registered Hides Sellers Association. Each member should obtain a Certificate of Authorisation for grading through the Association. If such a society is formed voluntarily, so far so good ; if not, provincial governments should take advantage of their respective Markets Acts and enjoin the merchants in the specified markets to grade all hides before sale. As a result of control at the terminal markets, matters at the producing end would, it is hoped, automatically improve. The establishment of any organisation of buyers does not seem to be necessary.

For exercising supervision, an efficient and trustworthy Hide Inspectorate has to be set up. At each centre, where voluntary or compulsory wholesale grading is introduced, an experienced officer with suitable assistants should be employed for doing the inspection work. The staff should be such as can efficiently examine at least 25 per cent of the daily turnover at a place. An advisory committee of three persons appointed by the Hides Sellers Association of the place might also be set up to arbitrate on disputes of a technical nature which may arise between the officer and the holder of a Certificate of Authorisation. It is estimated that the cost of supervision would be about 1 anna per 6 hides handled and graded.

RECOMMENDATIONS ARISING OUT OF THE REPORT.

I.—Improvement in flaying.

The flaying of hides, almost all over the country, is very defective at present. On account of defective flaying, producers suffer an annual loss of at least Rs. 70 lakhs, by way of depreciation in value of otherwise good hides. To a small extent, there may be scope for improving the flaying in almost all countries of the world, but in India the loss is particularly heavy, it being equal to more than a tenth of the value of hides produced in the country (pages 61 and 62). The main reasons why the standard of Indian flaying has remained low are : permitting inexperienced flayers to operate at the slaughterhouses, payment of flaying charges at a flat rate which tempts the flayers to finish the job in a hurry, defective designing of the slaughterhouses, *e.g.*, absence of facilities for hoisting the carcass, poor lighting, insufficient space for performing the operation properly, use of unsuitable knives, etc., etc., (pages 60, 75 and 76). In the rural areas, wherein are produced almost all the dead hides which comprise three-fourths of the Indian production, the *chamars*, who have had no training or much practice in flaying, themselves do the work. Except for a few peripatetic parties put up only in recent years in certain provinces, there is no active or regular organisation to teach the *chamars* the art of flaying with any regularity (page 74). To remedy the above defects and effect improvement, it is recommended that :

(*i*) The Government of India should appoint a "Central Slaughterhouse Committee" consisting of an engineer with experience of slaughterhouse designing, representatives of Public Health, Agricultural Marketing and Veterinary Departments, representatives of municipalities, and at least three members from the Hides and Skins trade to represent different interests. The committee should :—

(*a*) prepare plans and estimates of buildings, equipment, etc., for slaughterhouses of various sizes and types, suitable for Indian conditions ;

(*b*) prepare model rules for the operation and control of the slaughterhouses in their day-to-day working, on the lines of the " Model rules for meat inspection and the inspection of slaughterhouses and their regulation ", prepared and circulated by the Imperial Council of Agricultural Research in 1939 ;

(*c*) suggest a suitable type of organisation which should be set up by the municipality of a place, to attend to all matters connected with the management of the slaughterhouses ;

(*d*) prepare rules for the examination of flayers, conditions of licence, renewal of licence, etc., for flayers operating at the slaugherhouses ; and

(*e*) prepare a set of instructions on proper flaying and curing of hides for the benefit of flayers, curers and demonstrators engaged on peripatetic demonstration work. These might be printed in as many local languages as possible in the form of pamphlets which should be suitably illustrated.

(*ii*) The recommendations made by the above committee together with plans, estimates, model rules, etc., should be printed in the form of a report for the guidance of the municipalities and provincial governments.

(*iii*) The Municipalities and other bodies responsible for maintaining the slaughterhouses should remodel and re-equip them, set up the necessary organisation for their control, license the flayers after a proper test and introduce a system of paying the flayers on a daily wage system rather than on a " piece-wage " basis, which prevails at present.

(*iv*) Improved methods of flaying, *e.g.*, use of flaying machines, should be introduced at the larger slaughterhouses, on an experimental basis, in the first instance. In such experimental schemes proper data should be maintained regarding comparative costs and benefits accruing from the improved methods. The Provincial Marketing Officers should, after proper investigation and consultation with the butchers, hide merchants and slaughterhouse authorities, prepare schemes for submission to those concerned.

(*v*) The Tanners' Federation of India, the various shippers and other local hide merchants associations should raise a "Hide Improvement Fund" to encourage, amongst other things, the payment of premiums to flayers for better flayed hides.

(*vi*) The provincial Veterinary Departments should encourage the Veterinary Assistant Surgeons (at present, approximately 1,500 are employed in British India alone) to pay greater attention to hide improvement work, as a part of their normal duties. Many of them tour the villages and they can render useful service to the producers and the hide trade, through propaganda and demonstration of improved methods of flaying, taking care of the hide of the animal while it is still alive, etc. The Imperial Council of Agricultural Research should prepare a suitable set of model instructions for the guidance of provincial departments. For the future entrants, the authorities controlling the Veterinary Colleges should include the subject of "hide improvement" in the curriculum.

(*vii*) In rural areas, the Provincial Governments should provide peripatetic parties consisting of well trained village *chamars* for giving the necessary demonstrations at the villages. In this connection the results will be better perceptible if the work is confined to selected and suitable districts. The

Provincial and State Marketing Officers should arrange for proper marketing of improved hides after grading. It is very important that the continuity of these demonstrations be maintained.

II.—Improvement in curing.

Although proper curing of hides is of even greater importance than flaying, the existing methods are very unsatisfactory. Approximately half the production is at present prepared into *sukti* hides by merely spreading them on the ground or throwing the hides on branches of trees, etc., and drying them in the sun. The pelt is seldom washed and adhering tissues and even strips of meat are rarely trimmed, nor is the hide stretched properly in drying. The prepared article is thus very inferior in quality (page 65). In the case of salt cure also, curing is done in a haphazard manner. Although salt is recognised as the best hide curing medium throughout the world, in India it is used only when available free of duty from the Government Salt Department, under certain conditions. The rules for obtaining this excisable article, duty-free, can generally be complied with only by larger merchants (pages 70 to 73). Thus, the small primary producer is ordinarily unable to use salt for curing hides. In certain parts, instead of the edible salt, a saline earth deposit known as *khari* salt is used. It affords special facilities for "loading" the hides where they are sold on weight basis (page 70). It is accordingly recommended that :—

(*i*) The peripatetic flaying parties suggested under item (*vii*) in Recommendation I should simultaneously demonstrate the "Suspension" and the 'Java' methods of air-drying hides, as described on pages 80 to 82 of the report, to replace the present "sukti" method. [For better marketing of hides flayed and cured under improved conditions, see item (*iii*) under Recommendation VII.]

(*ii*) The Central Salt Department should explore the possibilities of supplying and extending the use of bittern or/and "denatured salt" for curing hides. They might also induce their village salt distributors to carry sufficient stock of "denatured" or bittern salts and sell the same to the *chamars* and others. The Department may also further examine their rules for obtaining delivery and sale of these salts.

(*iii*) On the pattern of the Government Fish Curing Yards existing in the *Madras Province,* the Central Salt Department and the Provincial Industries Departments should explore the possibility of establishing "Government Hide and Skin Curing Yards," where duty-free salt could be made available to all curers and particularly to small producers (page 82).

(*iv*) In order to prevent "loading" of hides, the various trade associations should resolve against the purchase of *khari* cured hides on weight basis and instead induce their members to buy such hides on "per piece" or "per score" basis only, as was the case some years ago and is the practice even now in certain markets.

(*v*) The Provincial and State Co-operative Departments should explore the possibilities of organising co-operative societies with a view to improve the flaying, curing and marketing of hides as suggested on pages 85 and 86.

III.—Research in curing.

Knowledge about the curing properties of the different salts and saline deposits available in India and the efficacy of different curing methods under Indian conditions, is poor. Neither the Salt Department nor the trade possesses much information on the subject (page 83). The Government Leather Chemists, employed in only some of the provinces, have in the past mainly interested themselves on the study of tanning materials and tanning of leather (page 84). While these studies should continue, it is essential to begin work on the methods of curing and the curing materials also.

It is recommended that the Government Leather Chemists in the provinces and the Central Salt Department should take in hand the study of the curing properties of different types of Indian salts and saline deposits and also the methods of curing adopted at present. They should standardise the latter and advise the trade on the use of the former. The Board of Industrial and Scientific Research should favourably consider the financing of such schemes.

IV.—Utilisation of weekly markets (*hats*, etc.), for hide improvement work.

In several provinces and States a large number of periodical markets (weekly or bi-weekly) are held in rural areas for the sale and purchase of village produce. They are generally more prevalent in the south and east than in the north and west. In any case, a *hat* or *shandy* is an important event in the country-side and people, including *chamars*, flock there from the surrounding villages, if not for selling or buying the goods, at least for meeting others and seeing things for themselves. Since there may be some difficulty of reaching the *chamars* and others in their distant villages, the periodical markets provide good scope for doing educative propaganda and giving suitable demonstrations regarding improved preparation and marketing of agricultural produce :

(*i*) The attention of the Provincial Rural Development Departments is particularly drawn to the favourable position of *hats*, etc., for carrying out educative propaganda on various matters connected with marketing. It is recommended that suggestions made under Recommendation I (*vii*) and Recommendation II (*i*) might be specially tried out at the periodical markets.

(*ii*) The controlling authorities of the periodical markets should arrange at suitable *hats* to make available the prevailing hide prices, etc., by displaying them on " black boards " or by announcing them by a " beat of drum."

V.—Market Intelligence.

Reliable and up-to-date information of stocks, arrivals, prices, etc., relating to a commodity is essential for the successful prosecution of business in modern times. It is observed that in the case of several commodities, *e.g.*, cotton, jute, wheat, groundnuts and lac, the market intelligence service is well developed. Although hides are of considerable importance and have a substantial export trade, a proper market intelligence service is significantly absent, even at the terminal markets. At present, all important buyers and sellers have perforce to make private arrangements for getting certain basic information. Moreover, correct information seldom filters down to the country-side, with the result that butchers or the village *chamars* rarely benefit by a rise in prices in the terminal markets (page 124). An organised market news service at terminal markets and dissemination of information to the smaller markets and country-side is, therefore, very necessary for the hide trade as a whole. It would certainly be better to have the quotations on the basis of statutory grades, but even with the existing trade names and descriptions of the hides, the service should be quite useful. It is accordingly recommended that :—

(*i*) A suitable central organisation should collect reliable information on daily prices and stocks at important inland and port markets as well as on foreign trade tendencies. As London prices of " Half-tanned hides " have a bearing on the price paid for up-country hides by the " Madrasi tanners ", regular collection and review of these prices are important. The information should be published in a bulletin form, which should also be released to the press and to the All-India Radio. For the immediate present, the recommendation is commended to the attention of the Tanners' Federation of India, *Cawnpore*, for underaking this work in collaboration with Shippers' and other Associations.

(*ii*) The District Boards should arrange to obtain the above information and display it at such *hats* in their areas where a large number of hides are collected or sold. The Provincial Marketing Officers should advise the District Boards in this matter and indicate to them the names of suitable *hats* where the information may be displayed or announced through a " beat of drum ", as also the specific type of information which would be most useful to the sellers in the countryside.

VI.—Transport of hides.

Railways are by far the most important means of transporting hides over long distances, but they are invariably carried by the goods trains, which take comparatively long to arrive at their destinations (page 190). The delay causes loss and hardship to merchants. Further, the hides are carried in iron wagons and on account of excessive heating, the goods get damaged and deteriorated in quality (page 191). At present, the wet hides are transported at the same rate as the dry hides. Since the former are much heavier, it is but appropriate that the wet-salted goods should be carried at a lower rate than the dry hides. Besides, as tanners always prefer wet-salted goods to dry-cured hides, it is expected that the lowering of rates would mean an increase in use and traffic for this particular type of cure, and the railways would not suffer any loss on the whole (pages 190 and 191). A differentiation in rates would certainly help the leather industry, as through greater use of wet-salted hides, the quality of leather produced in India would improve. Further, for wet-salted cure, the railways will have to carry, at one stage or other, certain quantities of salt also, which are not required nor carried at present, for the preparation of most of the dry hides.

It is recommended that the Railway Board should address the respective railways to examine the changes that may be required in the transport of hides, with a view to (*i*) arranging for speedier transport, (*ii*) providing wagons with wooden floors and sides, and (*iii*) introducing a lower rate for the wet-salted hides relative to that for the dry goods.

VII.—Re organisation of hide grading and marketing.

Although there exist in the country over 35 large assembling and distributing markets for hides, the trade does not adopt any statutory system of grading and marking them (page 202). Each merchant or commission agent does the so-called sorting according to his own notions of quality or in accordance with market tendencies. For instance, if the demand is heavy, a " second grade " hide is sorted as " first " and *vice versa* (page 204). Even at the two largest markets, *Calcutta* and *Cawnpore*, where 11,000 and 9,000 hides are handled daily, and where the value of the annual business turnover is approximately Rs. 2 and 1·6 crores respectively, the same conditions unfortunately prevail (page 205). In other words, except for the AGMARK specifications, at present applicable to the green hides and used at a few slaughterhouses only, there are no statutory grade specifications for cured hides. The result is that the buyers have no confidence in the hide merchants' assortment and are unable to purchase or give price offers on the basis of grades. In the opinion of leading tanners, the difficulties of finding a market for finished leather are not one-tenth as vexing as those of finding supplies of suitable raw hides (page 203). In this respect, conditions prevailing in the export trade are also equally unsatisfactory. Although Indian shipments are made on the basis of " Hamburg Classification ", foreign buyers are generally dissatisfied about the lack of uniformity in the quality of Indian consignments. Some of them have apparently given up the purchase of Indian raw hides in disgust which is shown by a considerable decrease in the export of this commodity, during the last 10 or 15 years (page 29).

In 1937, on the advice of a trade conference between the Indian tanners and the Central Marketing Staff, a beginning towards grading and marking on the basis of statutory grades, was made at some of the slaughterhouses, under the AGMARK scheme. Up to the end of 1940, approximately 7 lakh hides were graded and marked at the eight principal slaughterhouses in the country, and the cost to the Central, Provincial and Indian State governments was approximately Rs. 85,000. This meant grading of about 3,000 hides per week of

6 days but, under the existing system of assembling and distribution, the scheme in its present form did not appeal to the buyers. Besides, " curing " is an important item on which the final price of the hide depends very considerably. Unless, therefore, a hide graded at the slaughterhouse is also properly cured (which includes washing and trimming), the grading in the green state alone may not be sufficient and be even misleading. The final buyers purchase mostly cured hides and if they are to pay on the basis of grades, the grading should not only be done after curing, but it is essential that the work should be entrusted to a trustworthy and competent authority which can command the respect and confidence of the trade.

The experience gained in the grading of hides at the slaughterhouses has, however, been of great value in estimating the requirements of the trade and in drawing up a revised scheme to cover all the hides, *viz.*, cured, dead and slaughtered handled at a market. The scheme in all its details is given in Chapter IX of the report, *viz.*, Reorganisation of Hide Marketing (pages 202 to 212). It is recommended that :

(*i*) A conference of representatives of hide merchants, tanners and shippers in India should be called to discuss the scheme of the grading of hides, as described in Chapter IX of the Report.

(*ii*) Provincial governments, in collaboration with the hide trade, should introduce grading and marking of hides sold in larger markets. For that purpose, all the merchants and commission agents operating in a market should be registered into a " Hide Sellers' Association ", which should be made primarily responsible for the grading work. The merchants themselves should be authorised to grade their goods in accordance with statutory grade specifications and their work should be regularly supervised by a properly qualified, trustworthy and independent " Hide Inspectorate " set up at each market. The funds for this body should be found by the local Association, by levying a suitable charge per piece. It is suggested that, as an experimental measure, the scheme should, in the first instance, be tried at *Calcutta* and *Cawnpore.*

(*iii*) The developmental work envisaged in Recommendations I and II should be concentrated in areas round about primary or secondary markets, which feed the terminal markets with hides. At such smaller markets the Provincial Marketing Officer should arrange for obtaining better prices for hides flayed and cured in an improved manner either by grading them at the secondary markets or by arranging for their sale through a merchant at the terminal market.

VIII.—Certification of hides exported from India.

The arrangements which exist at present for the certification of hides in India before export are not acceptable in all the countries (page 55). Of late, some of them have made their import regulations more stringent. As for example, the Government of the Union of South Africa, since 1939, require that each consignment should be covered by a certificate indicating "that the areas, from where the hides came, were free from certain contagious diseases 12 months prior to the removal of the hides to the Union" (page 54). When it is realised that a consignment may have several hundred hides, drawn from different parts of the country without their origin being known, no veterinary officer can give the required certificate with confidence. Under present conditions, the Indian shippers could not naturally obtain the required certificate and the trade in raw hides with that country, which had become quite promising during recent years, had to be practically abandoned on account of the new regulations promulgated there (page 55). It is, however, essential that the Indian Veterinary Authorities should be able to help the trade in giving the required certificates before export. In this connection, a draft bill "The Animal Contagious Diseases Act" has already been prepared by the Imperial

Council of Agricultural Research and is awaiting enactment by the Provinces and States (page 55).

> It is recommended that the provinces and the more important Indian States should consider the draft bill on "The Animal Contagious Diseases Act" and enact the same, so that they may have the legal powers to collect information regarding prevalence of contagious diseases and do the necessary certification of animal products (including hides) exported from their respective areas.

IX.—Development of export of Indian hides (tanned or raw)

India produces far too many hides to be all used internally. In order to dispose of the surplus production (tanned or as raw) the country had always to depend on export markets (page 28). The Central European countries have been the largest buyers of raw goods and the United Kingdom, of tanned hides (pages 32, 36 and 43). Before the Great War (1914), India exported annually about 143 lakh raw and tanned hides, valued at over Rs. 8 crores. Before the present War (1939), it exported 111 lakh pieces and received for them Rs. 4·3 crores only (page 28). The general fall in the exports and prices may be attributed mainly to faulty preparation of hides, absence of grading and lack of uniformity in the Indian consignments. More than 20 years ago. the Trade Enquiry Committee on Indian Hides, appointed by the Imperial Institute, London, visited this country and pointed out in clear terms that a great deal of improvement in the flaying, curing and making up of the consignments before export was necessary (page 74). Unfortunately, however, except for the AGMARK grading scheme, little has been done in this direction so far. It is apprehended that if the quality of Indian consignments does not improve and no steps are taken at this end to study the latest requirements of foreign buyers and to work up to them, India may never regain its lost markets or secure new ones. It is accordingly recommended that :

(*i*) Steps should be taken to improve the quality of Indian hides. The enforcement of

Recommendations I, II and VIII is particularly stressed to meet the requirements enumerated above ;

(*ii*) The shippers' associations in the country must agree to adopt a statutory system of grading and marking bales of hides, before export ;

(*iii*) In order to improve the prices and demand for Indian raw goods abroad, it is essential to study more fully and closely the requirements of the buyers in other countries. This information cannot be obtained satisfactorily through correspondence but a personal study of the requirements and contact with buyers are required. For achieving this, the Government of India in the Department of Commerce should send out from here suitable officers having all-India experience in the production, preparation, grading and marketing of agricultural produce, to be attached to the offices of the Indian Trade Commissioners in the principal countries abroad. The Trade Commissioners should arrange for these " attached officers " to get in personal touch with the importers, brokers and manufacturers, who indent or use Indian raw goods. They should study their requirements carefully and pass on the information to exporters and government departments in India. To start with, an officer each should be attached to the Indian Government Trade Commissioners, in London and New York.

X.—Research on insect pests which damage the hides.

Warbles and ticks are the common pests that cause considerable damage to the hides. It is difficult to estimate the amount of annual loss suffered by the producers on this account, but there is no doubt that many good hides are ruined annually and the loss to the trade is enormous. Some idea of the damage caused may, however, be had from previous findings. Cotes in 1891, for example, stated that 10 per cent. of hides shipped from

Calcutta, Bombay and *Madras* were depreciated on account of warbles, to the extent of half their value. The Imperial Entomologist opined in 1923 that 40 per cent of the *Punjab* oxen hides were warbled and the proportion was even greater in *Baluchistan, Sind* and *Rajputana*. Ticks are found to be more common in the South and many hides produced in that part bear tick marks page 150).

Warbles and ticks are found in other parts of the world also and, although they have not been completely mastered, their incidence has been reduced a good deal. Apart from research in the methods of controlling these pests in Denmark, Belgium, Sweden, Great Britain and Ireland special legislation had to be enforced to take effective measures for the destruction of pests when observed by the cattle owner in his stock. In India, the Imperial Veterinary Research Institutes at *Mukteswar* and *Izatnagar* have been paying some attention to the problem, but a good deal yet remains to be done, both on the research side and in trying out the results, under field conditions. It is recommended that :—

> The Imperial Veterinary Research Institute and the Provincial and State Veterinary Departments should carry out further research, on warbles and ticks. They should also consider ways and means to try out the various remedies or prophylactic measures under conditions obtaining in Indian villages. In this connection, the importance of intensive rather than extensive work should not be lost sight of.

*LIST OF HIDE MERCHANTS SHIPPERS AND TANNERS.**

A.—Wholesale Hide Merchants and Commission Agents.

AJMER-MERWARA.

Ajmer.

1. Hafiz Abdul Gafoor, Kamela.
2. Haji Badruddin, Kamela.

Beawar.

S. M. Abdul Hafiz, Kaschaban Mohalla.

ASSAM.

Gauhati.

Sheikh Shah Alam, Pan Bazar.

Imphal.

Mr. Mohd. Ali.

Karimganj.

Md. Siddiq Punjabi, Chan Bazar.

Nowgong.

Messrs. Somon & Sons, Nowgong Bazar.

Silchar.

K. B. Md. Hafiz & Sons.

Sorbhog.

Alien Mystery, Sorbhog Bazar.

BENGAL.

Barisal.

1. Mr. Iad Bux.
2. Mr. Ulfat Mia Katpathi.

Burdwan.

1. Mr. Abdul Razzak, Baji Pratappur, Katwa Road.
2. Haji Md. Abdulla, Mohalla Goda, P. O. Lakurdi.
3. Mir Manazat Ali, B. C. Road.

Calcutta.

1. Messrs. Ahmed Din Mahbub Ellahi, 15, Harinbari Lane.

Calcutta—contd.

2. Mr. Dost Mohammad, North Road, Narikeldanga.
3. The Goat Skin Supplying Co. Ltd., 22, Harinbari Lane.
4. H. Abdul Hameed Bros., 2, Pitter Lane.
5. H. Abdul Hameed Khan, North Road, Narikeldanga.
6. H. Abdul Hasnat, 3, Harinbari Lane.
7. Messrs. H. Kadir Baksh Md. Ibrahim, 3, Damzen Lane.
8. Messrs. H. Kadir Baksh Md. Sulaiman, 62, Pitter Lane.

---

* The decision to prepare and include a list of hide merchants, commission agents, shippers and tanners in India was taken at a very advanced stage of the preparation of the Report. It has therefore, not been possible to make the list as comprehensive as it was intended to do. The present list contains the names of about 525 hide merchants and commission agents, 265 tanners and tanneries and 80 shippers. The Agricultural Marketing Adviser does not, however, accept any responsibility about the names given in the list.

BENGAL—contd.

Calcutta—contd.

9. Messrs. H. Mohd. Husain Bashir Ahmad, 12, Damzen Lane.
10. The Hide and Skin Supplying Agency, 11|2 Harohi Street.
11. Messrs. H. S. Mohd. Hussain Md. Jan, 20, Tiretta Bazar Street.
12. Messrs. Jameel Ahmad & Sons, 10, Damzen Lane.
13. Mr. Khuda Baksh, 19, Harinbari Lane.
14. Messrs. M. Ali Husain Maula Baksh, 1, Damzen Lane.
15. Mr. M. Allah Baksh, 22 Harinbari Lane.
16. Mir Sabir Ali, 14, Moharani Swarnamayee Road.
17. Mr. Mohd. Almi, North Road, Narikeldanga.
18. Munshi Abdul Jabbar, North Road, Narikeldanga.
19. Munshi Ghulam Rasul, 11, Sreenath Babu Lane.
20. Mr. Nurul Islam Khan, 2, Damzen Lane.
21. S. Amjad Ali, 22, Harinbari Lane.
22. Messrs. S. H. Hazir Baksh H. Mohd. Jan, 14, Harinbari Lane.
23. Messrs. S. M. Nabi Chowdhry Brothers, 5, Sreenath Babu, Lane.
24. Messrs. Wazir Baksh Ahmad Husain, 9, Harinbari Lane.

Chittagong.

1. Mr. Arban Ali Sowdagar, Asadganj.
2. Mr. Imam Sharif, Asadganj.
3. Mr. Mian Jan Sowdagar, Asadganj.

Dacca.

1. Mr. Enayatullah Mia.
2. Haji Abdul Aziz, Posta.
3. Haji Anisur Rahman, Posta.
4. Haji Abdul Wahab, Posta.
5. Haji Balli Beopari, Rahmatganj.
6. K. S. Haji Emdad Ali & Sons.
7. Haji Israel, Posta.
8. Haji Kazi Zamal Abedin, Posta.
9. Haji Maulvi Allah Baksh Sircar, Posta.
10. Haji Maula Baksh Punjabi, 92, Posta.
11. Haji Mohd. Din Punjabi, 90 Posta.
12. Haji N. Ahmad.
13. Haji Somiruddin Mia, Posta.
14. Messrs. Haji Zainal Abdin, Hans Abdul Hakim Mohd. Abdul Almi, 76 Posta.
15. Mr. Mashrul Haq, Posta.
16. Messrs. Mohd. Amin Bros., 68, Posta.
17. K. B. Sheikh Fazal Elahi, Posta.

Kharagpur.

1. Mr. Abdul Qaddus, Panchbaria.
2. Mr. Abdul Rezzak, Panchbaria.
3. Mr. Abdul Sobhan Panchbaria.
4. Messrs. E. K. Haji Mohd. Mira Sahib, Panchbaria.
5. Mr. Mohd. Ahmad Jan.

BIHAR.

Chaibassa.

Messrs. Sajjad Ali Bashiruddin, Bari Bazar.

Darbhanga.

1. Mr. Abdur Rahim, Bakarganj.
2. Mr. Mohd. Sayeed, Mahrajganj Sarai.

Gaya.

Mr. Abdul Ali.

Muzaffarpur.

1. Messrs. A. E. Bluementhol.
2. Messrs. Corket Wahab.
3. Messrs. Francis Veanist.

BIHAR—contd.

Patna.

1. Messrs. Mohd. Yakub, Abdul Majid, Phulwarisharif.
2. Mr. Ramzan Mia, Narial Ghat, Dinapur.

Purulia.

Mr. Abdul Hafiz.

Ranchi.

1. Mr. Mohd Ali.
2. Mr. Mohd. Sulaiman.

Raxaul.

Mr. Rasal Mia.

BOMBAY PROVINCE.

Ahmedabad.

1. Messrs. Abdul Rahman Jamal Bhai, Near Municipal Office.
2. Messrs. Kemalbhai Kherabhai, Kamsabate.
3. Messrs. Musabhai Ibrahim, Mirzapur.
4. Messrs. Mustapa Ibrahim Jalu, Mirzapur.
5. Messrs. Nurubhai Yarubhai, Jamalpur.

Ahmednagar.

1. Mr. Husenbhai Velji, Bagroja.
2. Mr. Sitaram Deoji Kavde, Bagroja.
3. Mr. Yamaji Sonaji Kavde, Bagroja.

Belgaum.

1. Mr. Jiva Raj Shet, Kassah Gali.
2. Messrs. M. J. Jamal & Co.
3. Mr. N. Abdul Sughan Sahib, Khadebazar.

Bijapur.

1. Mr. Chayappa Master, Sholapur Gate.
2. Messrs. M. G. Company, Outside Sholapur Gate.

Bombay.

1. Messrs. Allarakhia Visram, Dharavi.
2. Messrs. Faizulla Khan Hasan, Triyan Co., Dharavi.

Bombay—contd

3. Messrs. Fazal Bhai Hilzi, Dharavi.
4. Messrs. Haji Abdul Karim Abdur Rasool, Dharavi.
5. Messrs. Nurrudin Abdulla Bros., Dharavi.
6. Messrs. Rahmatullah Haji Ahmad, Dharavi.
7. Messrs. Rahmatullah Haji Ismail, Dharavi.
8. Messrs. Yakub Ali Mohd. Ali, Dharavi.

Broach.

1. Mr. Ahmed Mohd. Raja, Khatki Wad.
2. Mr. Ibrahim Mohd. Kala, Khatki Wad.
3. Hafizjee Mohd. Ahmed, Khatki Wad.
4. Mr. Mohd. Ibrahim Nasir, Khatki Wad.

Dharwar.

Messrs. The Dharwar Machigar Co-operative Credit Society.

Godhra.

1. Messrs. Haji Abdul Kajam Haji Isa Bhagat.
2. Messrs. Mohd. Haji Isa Bhagat.

Hubli.

1. Mr. L. K. Holgi, Ganesh Peth.
2. Messrs. B. T. Ghodke & Sons.

BOMBAY PROVINCE—contd.

Manmad.

Haji Shaha Mohmed.

Nasik.

1. Messrs. Kuddusbhai & Co., Nasik Road.
2. Mr. T. Abdul Karim, Main Road.

Sholapur.

1. Messrs. Ammoddin Kamroddin, Bijapur Ves.
2. Messrs. Ansar Buddan, Bijapur Ves.

Sholapur—contd.

3. Maulvi Mohd. Hanif, Bijapur Ves.
4. Messrs. P. Hajibadsha & Co., Bijapur Ves.

Surat.

1. Messrs. Hafiz Bros., Rani Talao.
2. Messrs. H. Firozuddin, Zampa Bazar.
3. Messrs. Mallangbhai Abdul Rehman Mullaji, Ram Talao.
4. Messrs. S. Nazamddin, Murvan Tekra.

COORG.

Mercara.

1. Messrs. Gidda Sait & Sons.
2. Messrs. Mulhuza Baig & Co.

Virajpet.

Mr. Abdul Kuddus Sait.

CENTRAL PROVINCES & BERAR.

Akola.

Mr. Naina Mohammad.

Amraoti.

1. Messrs. Abbas Sheikh Ibrahim, Khangarpura.
2. Messrs. S. Saiyad Aziz Ahmad, Sahanpura.
3. Messrs. S. Fazal Haq, Sahanpura.

Burhanpur.

1. Messrs. Abdul Rahim Chanda Sahib.
2. Messrs. Mohd. Syed Abdul Rahim.

Jubbulpur.

1. Mr. Abdul Hakim, Madar Tekri.
2. Mr. Mohd. Ismail, Madar Tekri.
3. Mr. Mohd. Yasin, Madar Tekri.
4. Seth Zakar Ali Seth Adam Bahora, Kolwali Bazar.
5. Sheikh Badal, Madar Tekri.
6. Sheikh Sabrali, Madar Tekri.

Khandwa.

1. Mr. Abdul Rahman.
2. Messrs. Hafiz Abdul Shafoor.
3. Mohd. Yasin, Budhwara Bazar.

Nagpur.

1. Mr. Fazal Karim, 17|23 Hasanpuri.
2. Mr. Deoji Gujarati, Kamptee Road.
3. Haji Abdul Rahman, Kamptee.
4. Haji Wazir Mohd. Kamptee.
5. Mr. Kudrat Seth, Mominpura.

Raipur.

Messrs. J. A. Rizvi & Co.

Saugor.

1. Mr. Abdul Rahim, Mandi.
2. Mr. Ali Mohmad Ayah, Katra Bazar.
3. K. S. Fakir Mohd. Khamisa.
4. Mr. Mohd. Sahid, Sadar Bazar.
5. Mr. Nalu Bux, Mandi.

DELHI PROVINCE.

Delhi.

1. Messrs. Abdulla Baksh Illahi.
2. Babu Habibullah & Sons, Teliwara.
3. Hafiz Abdul Hakim Abdul Ghani.
4. Hafiz Abdul Khaliq Haji Fazal Illahi.
5. Haji Abdur Salam Fazal Illahi, Sadar Bazar.
6. Haji Mohd. Saddiq Mohd. Yamin, Sadar Bazar.

Delhi—contd.

7. Maulvi Fazal Karim & Sons.
8. Messrs. Rafiq Bros.
9. Messrs. Ralli Bros.
10. Messrs. S. Abdur Rahman.
11. Messrs. S. Abdul Samad Abdul Haq.
12. Messrs. S. Mohd. Ibrahim Abdul Rashid.

MADRAS PROVINCE.

(NOTE :—Most of the merchants in this province possess bark tanneries and in case they act only as hide dealers, an asterisk mark has been put against their names.)

Adoni (Dist. Bellary).

1. Mr. Abdul Mazid Sahib.
2. Mr. Chinna Thippanna.
3. Messrs. J. K. Ahmad Kasim Sahib.
4. Messrs. K. Mahmmad Yahiya.
5. Mr. M. Allapa.
6. Mr. M. Abdul Wahid Sahib.
7. Messrs. Roshan Mimulla Hussein & Co.

Aduthurai (Dist. Tanjore).

1. Mr. E. Madharsa Rowther.
2. Messrs. K. P. Mohammed Usa Rowther.
3. Messrs. T. M. Abdulla Rowther.

Anakapalle (Dist. Vizagapatam).

Mr. Abdul Rashid Sharif, Near Gandhi Market.

Ariyalur (Dist. Trichinopoly).

1. Mr. Abdulla Rowther, P. O. Perambalur.
2. Messrs. K. S. Pichakannu Rowther.
3. Mr. Musthappa Sahib, P. O. Perambalur.

Bezwada (Dist. Kistna).

1. Mr. K. Abdul Aziz, Tarapet.
2. Mr. K. Azeemuddin, Tarapet.
3. Mr. P. Abdul Khadar, Tarapet.
4. Mr. P. Hajee Racha, Tarapet.
5. Mr. S. Abdul Kajir, Tarapet.
6. Mr. V. Abdul Rahman, Tarapet.

Cannanore (Dist. Malabar).

1. Messrs. Moosa P. Abdul Qadir, Camp Bazar.
2. Messrs. Moosa P. Hydose Haji, Camp Bazar.
3. Messrs. Puthiakandi Ahmedi Kunhi, Camp Bazar.
4. Messrs. S. M. Mohammad Moosa, Camp Bazar.

Chempat (Dist. Trichinopoly).

1. Mr. Gulam Moideen Rowther.
2. Messrs. K. S. Md. Abdul Kadir, Idmalaipatty.
3. Mr. Mappillai Mohideen Rowther.
4. Mr. Meeramohideen Rowther.
5. Mr. Md. Moideen Rowther, Punganur.
6. Messrs. M. J. Md. Abdul Kadar.

MADRAS PROVINCE—contd.

Chempat (Dist. Trichinopoly)—contd.

7. Messrs. N. K. Md. Ibrahim Rowther.
8. Messrs. N. M. Kajameean Rowther.*
9. Messrs. P. M. A. Gulam Mohideen.
10. Mr. Peer Mohammad Rowther, Ithipur.
11. Mr. P. Sikandar Mohideen.
12. Messrs. R. E. Abdur Kadir, Idamalaipatty.
13. Mr. S. Mohammad Rowther.
14. Sheikh Mohammad Rowther, Punganur.
15. Messrs. S. S. Naina Md. Rowther, Idmalaipatty.
16. Mr. Variasai Rowther, Illupur.
17. Messrs. V. S. Md. Ibrahim Rowther.
18. Messrs. V. S. Mohammad Rowther, Pappakurichy.

Coconada (Dist. East Godavari).

Messrs. Mohammad Esaudi Mauna Laddi.*

Conjeevaram.

1. Mr. K. C. Masthan.
2. Mr. Pachayappa Mudaliar.
3. Mr. Vijaya Mudaliar.

Cuddalore (Dist. South Arcot).

Messrs. Ahmed Hussein & Co.

Dharmapuri (Dist. Salem).

Mr. Husain Ali.

Dindigul (Dist. Madura).

1. Mr. Chinnakanni Nadar, Nagalnagar.
2. Messrs. E. V. Mohd. Ibrahim, Nagalnagar.
3. Mr. Sued Haneefa Rowther, Mohammadapuram, Behembur.
4. Mr. Sayed Ibrahim, Mohammadapuram, Behembur.
5. Messrs. U. S. Peer Mohammad Rowther, Nagalnagar.

Erode (Dist. Coimbatore).

1. Mr. A. B. Sheikh Daood, Peria Agraharam.
2. Mr. A. O. Khadir Hussain, Peria Agraharam.
3. Messrs. C. M. Mohd. Sheriff & Co., Peria Agraharam.
4. Messrs. E. K. Hajee Mohd. Mira & Sons, Peria Agraharam.
5. Messrs. E. K. M. Abdul Jaleel, Peria Agraharam.
6. Messrs. E. K. M. Ahmad Bacha & Bros., Peria Agraharam.
7. Messrs. E. K. Mohd. Abdul Kadir, Peria Agraharam.
8. Messrs. E. K. Mohd. Ibrahim & Sons, Peria Agraharam.
9. Messrs. K. K. Khadir Hussein & Sons, Peria Agraharam.
10. Messrs. K. K. S. Khadir Mohideen & Sons, Peria Agraharam.
11. Messrs. M. S. Allaudin & Sons, Peria Agraharam.
12. Messrs S. E. G. Mohammad Hinya, Peria Agraharam.
13. Messrs. S. E. G. Mohd. Ibrahim & Sons., Peria Agraharam.
14. Messrs. S. E. G. Mohd. Ismail, Peria Agraharam.

Guntur.

1. Messrs. M. M. Mohideen Thambi, Sthambalagaruvi.
2. Messrs. N. Abdul Jabbar*, Hohidurpena, Near Mastan Darga.
3. Messrs. P. Abdul Kadar & Co., Agraharam.
4. Messrs. P. Abdul Subban,* Lalapet.

Ichapuram (Dist. Vizagapatam).

1. Mr. Mohd. Nazhar.*
2. Mr. Mohd. Nuruddin.*

Kodur (Dist. Cuddapah).

1. Mr. Irla Gangadu.
2. Mr. M. Guruswamy Chetty.
3. Mr. S. Abdul Rahman.

---

*Also a chrome tanner.

MADRAS PROVINCE—contd.

Koilpatty (Dist. Tinnevelly).

1. Mr. Muthian Nadar.
2. Mr. Periasamy Nadar.
3. Mr. Sahul Zahmed Marakayar.

Kumbakonam (Dist. Tanjore).

1. Mr. K. Govindswamy Pillai, Rly. Station Road.
2. Mr. K. Guruswamy, Palakkarai.
3. Messrs. T. R. Narainswamy Pillai, Rly. Station Road.

Kurnool.

1. Mr. Abdul Hakim.*
2. Mr. Abdul Shukur.*
3. Mr. Idur.*
4. Mr. Noor Ahmad.*

Madras.

1. Messrs. A. M. Abdul Kanni & Co.,* 4160 Mannadi Street.
2. Messrs. B. S. Ram Mohan & Co.,* 6, Nabikhan Subedar Street.
3. Messrs. B. T. K. M. Vajjravelu Mudaliar & Co.* 7, Rampillay Street, Periamet.
4. Messrs. Hajee Bakarudin & Co.,* 13, Sydenham Road, Periamet.
5. Messrs. K. A. Abdul Jabbar & Co.,* 20, Kumarappa Chetty Street, Periamet.
6. Messrs. M. Kareem Baksh, 23, Angappa Naick Street.
7. Messrs. S. L. Gangaiah & Co.,* 11, Sydenham Road, Periamet.
8. Messrs. S. M. Ibrahim Rowther,* 46, Vepery High Road, Periamet.

Mannargudi (Dist. Tanjore).

Mr. C. K. Mohammed Rowther, Big Bazar Street.

Masulipatam (Dist. Kistna).

1. Mr. Labbe.* Kotta Masi, Rajupet.
2. Mir Mahboob Ali Khan,* Yinagudur.
3. Mr. M. M. Takki,* Yinagudur.
4. Nawab M. G. Hasankan, Yinagudur.

Mayavaram (Dist. Tanjore).

1. Mr. A. Rangaswamy Mudaliar,* Railway Cross Road.
2. Mr. Balrama Singh,* Big Bazar Street
3. Mr. Karim Sahib,* Railway Cross Road.
4. Mr. N. A. Abdul Kadir,* Railway Road.
5. Mr. P. Kadir,* Railway Road.
6. Mr. P. Ushamsa,* Railway Cross Road.
7. Mr. R. Varadarajulu Naidu,* Big Bazar Street.

Negapatam (Dist. Tanjore).

Mr. Mai-mu-mandi, Nagore.

Nellore.

1. Messrs. Abdul Azaz & Co.,* Subedarpet.
2. Messrs. G. M. Ebrahim & Co.,* Subedarpet.
3. Messrs. G. M. Perumal Naidu & & Co., Subedarpet.
4. Messrs. K. A. Mohammed Khasim & Co. Subedarpet.
5. Messrs. M. Abdul Rahim & Co.,*
6. Messrs. M. M. Mohideen Janki & Co.*
7. Messrs. N. M. Nagul Meera & Co.,* Santhapet.
8. Messrs. R. N. M. A. Karim Umar & Co.,* Santhapet.

Palghat (Distt. Malabar).

1. Mr. P. Sultan Mohd. Pulavar, Dance Market.
2. Mr. S. Meera Mohideen Rowther, Dance Market.
3. Mr. S. Mohideen Mada Rowther, Big Bazar Road.

Palladam (Distt. Coimbatore).

1. Mr. K. M. Khadar Bacha, Mauglam P. O.
2. Mr. K. S. Khadar, Manglam P. O.
3. Mr. M. Abdul Khadar Rowther, Dharapuram P. O.

MADRAS PROVINCE—concld.

Palladam (Distt. Coimbatore)—contd.

4. Mr. N. Mohd. Usuf Rowther, Dharapuram P. O.
5. Mr. S. Mohd. Ibrahim Rowther, Dharapuram P. O.
6. Mr. U. K. Mohd. Rowther, Dharapuram P. O.

Salur (Dist. Vizagapatam).

1. Mr. Mohamad Yusuf, Near Cinema Pandal.
2. Mr. Yusuf Burhan Sait, Tazulganj Street.

Sankaran Koil (Dist. Tinnevelly).

1. Mr. Mariappa Nadar.
2. Mr. N. M. Sabool Ahmad Marakayar.
3. Messrs. T. C. Hajee Mohd. Marakayar.
4. Mr. V. Nagoor Rowther.

Swamimalai (Dist. Tanjore).

Messrs. C. N. Nattar Ibrahim Rowther.

Udipi (Dist. Mangalore).

1. Mr. Isak Bahu Biary, P. O. Gangolly.
2. Mr. Moideen Biary, P. O. Udipi.

Udumalpet (Dist. Coimbatore).

1. Mr. A. Mahithinpacha Rowther, Palani Road.
2. Mr. A. Muhamad Kani Rowther, Palani Road.
3. Mr. A. S. Kachmahidin Rowther, Palani Road.
4. Mr. K. V. Babu Sahib, Palani Road.
5. Messrs. M. A. Santhumayamathu Rowther, Palani Road.
6. Messrs P. M. G. Abul Kadar pacha Rowther, Palani Road.
7. Mr. P. Srinivasan Pillai, Palani Road.
8 Mr. R. Mughamathu Ismail Rowther, Palani Road.
9. Mr. R. Mohammad Mirashi Rowther, Palani Road.

Vizagapatam (Dist. Vizagapatam).

Messrs. M. M. A. K. Mohideen Thambi, Changaraspet.

NORTH-WEST FRONTIER PROVINCE.

Baffa (Dist. Hazara).

1. Messrs. Gohar Rehman Mohd. Yakub.
2. Messrs. Gohar Rehman Muzaffar Khan.
3. Mr. Khoedad Khan.
4. Messrs. Mohd. Ishaq Abdul Aziz.
5. Messrs. Musa Khan Taj Mohd.
6. Messrs. Rehmat Gul Mohd. Yakub.

Bannu.

1. Mr. Abdulla Allah Baksh Butcher.
2. Messrs. Fazal Husein Mohd. Sadiq.
3. Messrs. Mohd. Ismail Ibrahim.
4. Messrs. M. Mohd. Ramzan Hameshbul.

Bannu—contd.

5. Messrs. Sh. Fazal Ilahi Mohd. Sharif.
6. Messrs. Suk Musa Allah Baksh.

D. I. Khan.

1. Mr. Mohammad Husain, S|o. Khuda Baksh.
2. Mr. Mohammad Husain, C|o. Mohd. Ismail.

Haripur (Dist. Hazara).

1. Seth Abdul Rahman.
2. Seth Gauhar Rahman.

Kohat City.

1. Haji Abdul Rasul.
2. Haji Ghulam Rasul.
3. Haji Mohd. Ramzan.

North-West Province—contd.

Kulachi (Dist. D. I. Khan).

1. Mr. Bhawal Gazar.
2. Mr. Ghulam Husain Khoja.
3. Mr. Ghulam Ishaq Khan.
4. Mr. Ghulam Sarwar Noon.

Lakki (Dist. Bannu).

1. Mr. Ghulam Husain.
2. Mr. Ghulam Mohammad.

Mansehra (Dist. Hazara).

1. Mr. Abdul Gaffor, S|o. Mohd. Ishaq.
2. Mr. Rahmat Gul Khatak.

Nowshera Town.

1. Haji Abdul Rahim.
2. Mr. Jimma Khan.
3. Mr. Mohibulla Khan.
4. Mr. Najibullah.
5. Mr. Safiuddin.

Peshawar.

1. Messrs. Chiraj Din Mohd. Shafi, Sabzi Mandi.

Peshawar—contd.

2. Mr. H. Dilbar Shah, Inside Bijori Gate.
3. Messrs. Imam Din Abdul Aziz, Sabzi Mandi.
4. Messrs. Karim Bux Pir Bux, Inside Bijori Gate.
5. Mr. Khan Baz Shahzada, Inside Bijori Gate.
6. Messrs. M. Ghulam Husain Ghulam Jilani, Inside Bijori Gate.
7. Messrs. Mian Mohd. Haji Fida Mohd., Outside Kabuli Gate.
8. Messrs. Mohd. Baksh Abdul Aziz, Mewa Mandi.
9. Messrs. Pir Baksh Nazir Husain, Inside Bijori Gate.
10. Messrs. Sh. Mohd. Ramzan Abdul Karim, Outside Kabuli Gate.

Tank (Dist. D. I. Khan).

1. Mr. Ghulam Abbas Qureshi.
2. Messrs. Mohd. Ali Bhabni Shakhi.
3. Messrs. Mohd. Hussain Dogal Khoja.

ORISSA.

Berhampur (Dist. Ganjam).

1. Mr. Abdul Rahman.
2. Kazi Ibrahim.
3. Messrs. Kulamma Moosa Nama Lubby.
4. Messrs. S. R. Abdul Aziz.

Bhadrak.

1. Shaikh Lateef, Sadak Muhulla.
2. Shaikh Mukbool, Sadak Muhulla.

Cuttack.

1. Messrs. Kathab Mohammad Lubby, P. O. Chauliaganj.
2. Messrs. L. M. S. Sadach Thamby, P. O. Chauliaganj.

Cuttack—contd.

3. Messrs. M. A. Jamal, Buxi Bazar.
4. Messrs. M. M. A. K Mohimuddin Thambi, P. O. Chauliaganj.
5. Mr. Rahim Khan, Dargha Bazar.

Jeypore (Dist. Koraput).

1. Messrs. C. Abdul Hakim Abdul Sukur & Co., Main Road.
2. Messrs. K. M. Kasim & Co., Main Road.

Jharsuguda.

1. Mr. Fazal Bhai Dalal.
2. Mr. Fazal Ismail.
3. Mr. Kasen Bhai Bhanji.
4. Mr. Rashiddi Mohd.

ORISSA—contd.

Khurda Road.

1. Messrs. A. Hasim S. Abdul Kadar & Co.
2. Messrs. A. S. A. L. Abdul Aziz.

Puri.

Mr. Nooruddin Khan, Harikrishanpur.

Sambalpur.

1. Messrs. Md. Azmi Khan.
2. Messrs. Umar Mian Yusuf Mian.

PUNJAB.

Amritsar.

1. Messrs. Ali Baksh Inayat Ullah, Hide & Skin Market, Grand Trunk Road.
2. Messrs. Abdul Majid Ghulam Mohd., Hide & Skin Market, Grand Trunk Road.
3. Messrs. Abdul Razak Abdul Rashid, Hide & Skin Market, Grand Trunk Road.
4. Messrs. Mukhi Iman Din Allah Ditta, Hide & Skin Market, Grand Trunk Road.
5. Messrs. Qurishi Sher Mohd. Mohd. Said, Hide & Skin Market, Grand Trunk Road.

Jullunder City.

1. Messrs. Abdul Karim Abdul Latif, Railway Road.
2. Messrs. Allah Bux Inayat Ullah, Railway Road.
3. Messrs. Dil Mohd. Mohd. Ishaq, Railway Road.
4. Messrs. Haji Azamat Ullah Mohd. Buta Mohd. Yasin, Railway Road.
5. Messrs. Pir Mohd. Khuda Baksh, Railway Road.
6. Messrs. Wali Bahadur Bashir Ahmad, Railway Road.

Kasur.

1. Messrs. Faiz Mohd. Abdur Rahman, Kot Din Garh.
2. Messrs. Haji Habibullah & Sons, Kot Din Garh.
3. Messrs. Mohd. Amin Mohd. Ishaq, Kot Din Garh.
4. Messrs. Mohd. Amin Mohd. Sharif, Kot Din Garh.

Lahore.

1. Messrs. Abdul Qadir Riaz Mohammad, Hide Market, Grand Trunk Road.
2. Messrs. Fazal Din Abdul Majid Mohd. Zahoor, Hide Market, Grand Trunk Road.
3. Messrs. Fazal Din Fazal Illahi, Hide Market, Grand Trunk Road.
4. Messrs. Fazal Karim Fazal Illahi, Hide Market, Grand Trunk Road.
5. Messrs. Mohd. Sultan Mohd. Ishaq Fazal Hussain, Hide Market, Grand Trunk Road.
6. Messrs. Mohd. Warris Mohd. Ismail, Hide Market, Grand Trunk Road.
7. Messrs. Nizam Din Fazal Din Muzaffar Din, Hide Market Grand Trunk Road.
8. Messrs. Nur Hussain Khuda Baksh, Hide Market, Grand Trunk Road.
9. Messrs. Pir Mohd. Ahmad Din, Hide Market, Grand Trunk Road.

Multan City.

1. Messrs. Haji Abdur Rahman, Outside Lahori Gate.
2. Messrs. Haji Imam Bux Manzoor Hussain Akhtar Hussain, Outside Lahori Gate.
3. Messrs. Haji Manawar Din Khan Muzaffar Mahmud, Outside Lahori Gate.
4. Messrs. Haji Mohd. Azim Khan & Sons, Outside Lahori Gate.
5. Messrs. Haji Sultan Mahmud Haji Khuda Bux Haji Mohd. Din, Outside Lahori Gate.
6. Messrs. Haji Sultan Mahmud Nazir Husain, Outside Lahori Gate.

PUNJAB—contd.

Multan City—contd.

7. Messrs. M. Muzaffar Din & Sons, Outside Lahori Gate.
8. Messrs. Sh. Allah Ditta Mohd. Iqbal, Outside Lahori Gate.
9. Messrs. Sh. Abdul Wahid Abdar Rahman, Outside Lahori Gate.
10. Messrs. S. Mehr Bux Sadar Din, Outside Lahori Gate.

Sialkot.

1. Messrs. Haji Karan Din Mohd. Abdullah, Raja Bazar.
2. Messrs. Haji Karim Bux Khuda Baksh, Raja Bazar.

Sialkot—contd.

3. Messrs. Haji Sh. Inayat Ullah & Sons, Raja Bazar.
4. Messrs. Haji Umar Din Jalal Din, Raja Bazar.

Wazirabad.

1. Messrs. Haji Amir Bux Haji Allah Din, Sialkot Road.
2. Messrs. Haji Mam Din Mahmud Ahmad, Sialkot Road.
3. Messrs. Sh. Niaz Ahmad & Bros., Sialkot Road.

SIND.

Hyderabad.

Messrs. Haji Mahboob Illahi Nazir Hussein.

Karachi.

1. Messrs. Haji Mehar Bux Moulabux & Sons,* Serai Road.
2. Messrs. Haji Mohd. Ismail Mohd. Ashraf,* Rangiwara.
3. Messrs. Manohardas Mohd. Gulzar,* Tramway Road.

Karachi—contd.

4. Messrs. Seth Gulam Hyder Bundali Kasim,* Rangiwara.
5. Messrs. Seth Rajabdin Mukundin, Rangiwara.

Sukkur.

1. Haji Amiruddin, Station Road.
2. Seth Charagdin, Near Market.
3. Seth Fazal Amir Ahmad, Station Road.

UNITED PROVINCES.

Agra.

1. Messrs. Awaz Husein Liaquat. Saddar Bhatti.
2. Mr. Bunda Ajmeri, Saddar Bhatti.
3. Messrs. Ghano Mohd. Maula Bux, Saddar Bhatti.
4. Messrs. Illahi Bux Punjab, Saddar Bhatti.
5. Messrs. Nasruddin Wahabuddin, Saddar Bhatti.
6. Messrs. S. Gulamuddin & Sons, Saddar Bhatti.
7. Messrs. Shamsuddin Ajmeri, Saddar Bhatti.

Agra—contd.

8. Messrs. Shafi Mohd. Wali Mohd., Saddar Bhatti.
9. Messrs. Wahabuddin Mohd. Zafar, Saddar Bhatti.

Aligarh.

1. Mr. Bhoora Khatik.
2. Messrs. Mohd. Ibrahim Latif.
3. Messrs. Mohd. Ishaq Seth.

Allahabad.

1. Mr. Mohd. Aziz, Bahadur ganj.
2. Hafiz Mohd. Hussain, Colonelganj.

---

*Tanners also.

UNITED PROVINCES—contd.

Allahabad—contd.

3. Hafiz Ramzan, Atalah.
4. Mr. Khalil Pahalwan.
5. Mr. Mohd. Razaq.

Bareilly.

1. Mr. Abdul Majid, Hide Market, Azamnagar.
2. Messrs. Ahmad Hussain & Sons, Hide Market, Azamnagar.
3. Messrs. Chotey & Sons, Hide Market, Azamnagar.
4. Messrs. Habibullah & Sons, Hide Market, Azamnagar.
5. **Messrs. Ibrahim Bux & Sons, Hide** Market, Azamnagar.
6. Messrs. Inayatullah & Sons, Hide Market, Azamnagar.
7. Messrs. Mohd. Ibrahim & Sons, Hide Market, Azamnagar.
8. Messrs. Najibullah & Sons, Hide Market, Azamnagar.

Benares.

1. Messrs. Bachoo Santoo, Hukulganj, Hata Robilla.
2. Mr. Hafiz Habibullah, Hukulganj, Hata Robilla.
3. Mr. Mohd. Hasan, Hukulganj, Hata Robilla.
4. Mr. Mohd. Shafi, Hukulganj, Hata Robilla.
5. Mr. Sadho Bhagat, Hukulganj, Hata Robilla.

Cawnpore.

1. Hafiz Mir Ahmad.
2. Messrs. Haji Abdulla & Sons.
3. Messrs. Haji Abdul Hamid Khan.
4. Messrs. Haji Bux Mohd. Jan.
5. Messrs. Haji Nathoo Mohd. Ismail.
6. Messrs. Haji Qadir Bux Haji Sulaiman.
7. Messrs. Karimuddin Habibur Rahman.
8. Messrs. Latif Brothers.
9. Messrs. Maulvi Mohd. Amin.
10. Messrs. Mohd. Sidiq Sabiuddin.

Cawnpore—contd.

11. Messrs. Sabiuddin Zaher Hussein.
12. Messrs. Sheikh Mian Sadruddin Mohd. Said.
13. Messrs. Sheikh Rahim Bux Feuz Hasan.

Dehra Dun.

1. Messrs. Abdul Samad Abdul Rab, Manuganj.
2. Messrs. Hafiz Abdulla Habibullah, Manuganj.

Etawah.

1. Mr. Allah Bux.
2. Mr. Karim Bux.
3. Mr. Mohd. Suleman.
4. Mr. Naboo Paltoo.

Hathras.

Messrs. Ram Lal Hoti Lal, Kherm.

Jhansi.

1. Mr. Kanhaya Lal, Outside Sahyer Gate.
2. Mr. Mohd. Abdul Hamid, Outside Sahyer Gate.
3. Messrs. Sheikh Basharat Sheikh Natha, Outside Sahyer Gate.

Meerut.

1. Messrs. Dayal Bagh Hide Tanning Co., Near Municipal Slaughter House.
2. Mr. Haji Baboo.

Moradabad.

1. Mr. Mohd. Habibullah, Asalatpura.
2. Mr. Mohd. Yakub, Asalatpura.
3. Mr. Mohd. Yasin, Asalatpura.

Muzaffarnagar.

1. Messrs. Ahmad Bux Magsood Ahmad, Qassahan.
2. **Messrs. Alla Banda Mohd. Hanif, Qassahan.**
3. Messrs. Ahmad Bux Maqsood Ahmad, Qassahan.
4. Messrs. Habib Ahmad Mohd. Yami, Qassahan.

UNITED PROVINCES—concld.

Pilibhit.

1. Mr. Abdul Karim.
2. Mr. Alla Bux.
3. Mr. Mohd. Aiwaz.

Saharanpur.

1. Messrs. Habib Ahmad Mohd. Yamin Dholi Khal.
2. Messrs. Mohd. Yamin Mohd. Anij.
3. Mr. Mohd. Yasin.

Sambhal.

1. Mr. Abdul Hamid, Nala.
2. Mr. Haji Abdul Shakoor, Nala.
3. Mr. Haji Wab Mohd., Nala.
4. Messrs. Ismail & Sons, Nala.

Shahjehanpur.

1. Mr. Abdul Rahim, Barkzai.
2. Mr. Khawja Bux, Barkzai.
3. Sheikh Abid Husain, Barkzai.

INDIAN STATES.

HYDERABAD STATE.

Gulbarga.

1. Abdul Aziz, Homnabad Road.
2. Abdul Khader Kamnur, Khunialawa.
3. Abdul Karim Waghya, Mohalla Gowkhasab.
4. Abdul Rahim, Mijaguri.
5. Chowdhry Dadan, Station Bazar.
6. Md. Mehtab Sahib, Mohalla Gowkhasab.
7. Munshi Abdul Khader, Kharibowli.
8. Roshan N. M. A. Carim Oomer & Co., Homnabad Road.
9. Ruknuddin Kamnur, Khunialawa.

Warangal.

1. Mr. Abdul Wahab, Mandi Bazar.
2. Mr. Akinepalle Narayana, Mandi Bazar.
3. Mr. Batchu Buchiramulu Thota Narasiah, Mandi Bazar.
4. Mr. C. Abdulla, Mandi Bazar.

Warangal—contd.

5. Hakim Abdur Razak, Mandi Bazar.
6. Messrs. I. F. Mohd. Zakaria, Mandi Bazar.
7. Mr. Indux Badruddin Mira Husein, Mandi Bazar.
8. K. V. Abdur Rahman, Mandi Bazar.
9. Messrs. M. M. Abdul Aziz, Mandi Bazar.
10. Messrs. M. Md. Kasim, Mandi Bazar.
11. Mr. Md. Nuruddin, Mandi Bazar.
12. Mr. Pavli Bandealy, Mandi Bazar.
13. Mr. Uppula Manikyan, Mandi Bazar.
14. Mr. Vodipilla Abdur Razak, Mandi Bazar.
15. Mr. V. K. Abdul Rahman, Mandi Bazar.
16. Mr. V. M. D. Ismail, Mandi Bazar.

KASHMIR STATE.

Srinagar.

1. Messrs. Ahmad Loam & Sons, Ganeshkhud, Zaniakadal.
2. Messrs. Habib Baba & Co., Near Lloyds Bank.
3. Messrs. Habib Joo & Sons, Ganesh Khud, Zaniakadal.

Srinagar—contd.

4. Messrs. Khaliq Pan & Sons, Ganesh Khud, Zaniakadal.
5. Mr. Samad Baba, Ganesh Khud, Zaniakadal.
6. Messrs. Subhan & Sons, the Bund.

INDIAN STATES—contd.

MYSORE STATE.

Bangalore.

1. Messrs. Chuna Abdul Razak & Co., Jeevanhally, P. O. Hebbal.
2. Messrs. H. C. Mohammadally & Co., Jeevanhally, P. O. Hebbal.
3. Messrs. V. Mohd. Yakub, Jeevanhally, P. O. Hebbal.

Kolar.

Mr. Mohd. Mustafa, Oorgaum, Kolar Gold Fields.

Mysore City.

1. Mr. Abdul Rahman.
2. Messrs. G. R. Ammerjan Abdul Karim Khan, Mandi Mohalla.

TRAVANCORE STATE.

Alwaye.

1. Mr. A. P. Devasey.
2. Mr. M. M. Makar Pillai.
3. Mr. Variad Iype.
4. Mr. W. M. Thariyath.

Athirampuzha.

Messrs. V. D. Varkey & Sons, Mannanam P. O.

Changanacherry.

Messrs. N. A. Thomas and N. V. Joseph Co.

Nagercoil.

1. Mr. A. Dastagir.
2. Mr. B. Namasivayakonar.

Nagercoil—contd.

3. Mr. P. S. Arumugha Perumal.*
4. Mr. S. Chelliah Nadar.

Quilon.

1. Mr. A. K. S. Bukhari.*
2. Messrs. M. K. Abdul Razak & Bros.*

Trivandrum.

1. Mr. A. Abdul Kassim.
2. Mr. Mohd. Hanif.
3. Mr. O. M. Abdul Kasim.
4. Mr. Palaniswami Bukhari.

B.—SHIPPERS AND EXPORTERS OF HIDES FROM INDIA.

BENGAL.

Calcutta.

1. Messrs. A. Forbes & Co., Ltd.
2. Messrs. Cox & Kings, Ltd., 5, Bankshall Street.
3. Messrs. Dost Mohd. & Co., 19, Zakariah Street.
4. Messrs. Hoare Miller & Co., Ltd., 5, Fairlie Place.
5. Messrs. Fudo Swiss Trading Co., Ltd., Post Box 2132.

Calcutta—contd.

6. Mr. K. Sheshadri.
7. Messrs. Martin & Co., 12, Mission Row.
8. Messrs. Max Stub, Ltd., 10, Clive Row.
9. Messrs. Mitters, Ltd., 3, Lyons Range.
10. Messrs. Mohd. Amin Bros., 25|26, Waterloo Street.

---

*Tanners also.

BENGAL—contd.

Calcutta—contd.

11. Messrs. Mousell & Co., Ltd., Mercantile Buildings, Lall Bazar.
12. Messrs. Piracha Brothers & Co., 38, Chittaranjan Avenue.
13. Messrs. Ralli Brothers, Ltd., 16, Hare Street.
14. Mr. S. Fazal Illahi, 35, Canal East Road.

Calcutta—concld.

15. Mr. Shamji Mull, 32, Clinighreeghatta Road, Entally.

Chittagong.

1. Mr. Dost Mohd., Asadganj.
2. Mr. M. Abdul Almi, Asadganj.
3. Mr. Md. Ismail, Asadganj.

BOMBAY PROVINCE.

Bombay.

1. Messrs. Ahmad Gulam Husein & Co., Samuel St., Khoja Mohalla.
2. Messrs. Anglo-Siam Corporation Ltd., P. O. Box 70.
3. Messrs. David Sassoon & Co., Ltd., Post Box 167.
4. Messrs. Grahams Trading Co. (India), Ltd., P. Box 90.

Bombay—contd.

5. Messrs. M. Mohammad Ali & Co., Dharavi.
6. Messrs. Meyer Nissim & Co., 10, Outram Road, Fort.
7. Messrs. Ralli Brothers, Ltd., Post Box 166.

DELHI.

1. Messrs. Hafiz Abdul Karim Abdul Majid, Sadar Bazar.
2. Messrs. Shamji Mull & Sons, Post Box 12.

MADRAS PROVINCE.

Madras.

1. Messrs. A. M. S. V. Pavanasa Nadar, Sivakasi.
2. Messrs. B. S. Abdul Wahab & Co., 34, Sydhenam Road, Periamet.
3. Messrs. C. Abdul Hakim & Co., P. Box 32.
4. Messrs. C. Haji Zainul Abdeen & Co., P. O. Box 95.
5. Messrs. Dewan Bahadur M. Balasundaram Naidu, Retherdone Road, Vepery.
6. Messrs. E. J. Husein & Co., 17, Muthu Grammani Street, Periamet.

Madras—contd.

7. Messrs. F. K. Hasheet & Co., 40, Sydhenam Road, Periamet.
8. Messrs. H. M. Ziyauddin & Co., 156, Angappa Naick Street.
9. Messrs. Ibrahim Khalik & Co., Post Box 1288.
10. Messrs. Kanan Trading Co., 293, Mint Street.
11. Messrs. M. Abdul Rehman & Co., 2, Kumarappa Chetty Street.
12. Messrs. M. Fazal Din Allahdin & Co., Post Box 506.
13. Messrs. Mohd. Khalil Shirazi & Son, 36-37, Angappa Naick Street.

MADRAS PROVINCE—contd.

Madras—contd.

14. Messrs. M. Mohd. Ali & Co., 34, Second Line Beach.
15. Messrs. M. M. Ibrahim & Co., 11, Vepery, Periamet.
16. Messrs. M. Parthasarathy & Co., 7, Nalukhan Subedar Street, Periamet.
17. Messrs. P. Haji Wahab & Sons, 17, Mukurappa Chetty Street, Periamet.

Madras—concld.

18. Messrs. Rulli Brothers, Dare House, Parry's Corner.
19. Messrs. R. H. Mendith, 11, Lini Beach.
20. Messrs. Simson & McConechy, Ltd., P. Box 1259.
21. Messrs. Shaw Wallace & Co., P. O. Box 14.
22. Messrs. South Indian Export Company, Maclean Street.
23. Messrs. T. B. Boorajanah & Co., P. Box 509.

PUNJAB.

Amritsar.

1. Messrs. Gore & Co., Krishna Market.
2. H. Peer Mohd. Ghulam Husein.
3. H. Peer Mohd. H. Sultan Mahmud, Hide Market.
4. Jagdish Narain & Co., Hide Market.
5. M. Yakud & Co., Hide Market.
6. Shamji Mull & Sons, Hide Market.
7. Sheikh Allahdilla Moula Baksh, Hide Market.
8. S. Ferozuddin & Bros., Hide Market.
9. S. Maula Baksh Mohd. Shafi, Hide Market.
10. S. Nazir Husein & Co., Hide Market.
11. Shamsuddin & Co., Hide Market.

Fazilka.

Sh. Fazal Illahi Khuda Baksh.

Jullundur City.

1. S. Fazal Illahi, Railway Road.

Lahore.

1. Messrs. Amin Brothers, Hide Market.
2. Messrs. Delta Hide Co., Hide Market.
3. M. Fazaldin Allabdin & Co., P. O. Walai.
4. Messrs. Moulvi Mohd. Din & Bros., Hide Market.
5. Messrs. Maher Singh, Sampuran Singh, P. Box 5.
6. Messrs. Ralli Brothers, Hide Market.
7. Messrs. Shamji Mull & Sons, Near Railway Godowns.

SIND.

Karachi.

1. Khoja Hoodbhoy Shalloani, Kharadhar.

Karachi—contd.

2. Messrs. Nusserwanji & Co., Marhimiam Road.
3. Messrs. Ralli Brothers, Ltd., P. Box 85.

UNITED PROVINCES.

Cawnpore.

1. Messrs. Dost Mohd. Allahbux, La Touche Road.

Cawnpore—contd.

2. Messrs. Fazal Din Allahdin Piracha, New Road.
3. Messrs. Md. Ismail Bros., Pech Bagh.

C.—TANNERS AND TANNERIES IN INDIA.

(NOTE :—C means "chrome" and B, "bark" tannery. Tanneries marked with an asterisk do their own shipping of leather.)

BENGAL.

Calcutta.

1. The Afong Tannery, South Tangra Road C
2. The Akken Tannery, South Tangra Road C
3. The Calcutta Tannery Ltd., 9, Clive Street .. C
4. The Chaiffee Tannery, South Tangra Road C
5. The Chenga Tannery, South Tangra Road C
6. The Chi King Tannery, South Tangra Road C
7. The Dacca Tannery Syndicate No. 4 Bridge.. .. .. B
8. The Food Skin Tannery, South Tangra Road C

Calcutta—contd.

9. The Hophin Tannery, South Tangra Road C
10. The John Hing Tannery, South Tangra Road C
11. The Lonisee Tannery, South Tangra Road C
12. The National Tannery Co. Ltd., South Canal East Road .. B&C
13. The Numchaong Tannery, South Tangra Road C
14. The Palat Tannery, South Tangra Road C
15. The Patna Tannery 12, Paymental Garden Lane.
16. The Tonga Tannery, South Tangra Road.
17. The Wassen Tannery, South Tangra Road.

BOMBAY PROVINCE.

Ahmedabad.

Messrs. Abdullabhai Roshanbhai, Kalapur .. .. B

2 The Ahmedabad Chrome Tanning Co., Jamalpurgate.

Ahmedabad—contd.

3. Messrs. Halilla & Co., Master Theatre .. .. .. B
4. Messrs. Isabhai Haji, Gheekanta .. .. .. B
5. Messrs. M. I. Brothers, Mirzapur .. .. .. B

BOMBAY PROVINCE—contd.

Belgaum.

The P. C. Boyce Tanning Factory, Thalakwadi .. .. .. B

Bijapur.

1. Mr. Appana Dhor, Jorapur Peth .. .. .. B
2. Mr. Durgaji Dhor, Jorapur Peth .. .. .. B
3. Mr. Talingappa Dhor, Jorapur Peth .. .. .. B
4. Mr. Shankar Dhor, Sholapur Gate .. .. .. B

Bombay.

1. Messrs. Ahmed Ghulam Husain & Co., 195-6A, Dharavi.
2. Messrs. Jam Mohammad Rahimtulla & Co., 3-4-5, Dharavi.
3. Messrs. Thikurla Tannery, Kurla, Bombay Suburban.
4. Mr. Mahmadali Ismail, Stock Exchange, Appollo Street, Fort.
5. The Nizamia Tannery, 223/24, Dharavi Road.
6. The Sholapur Tannery, 136, Dhabu Street.
7. Mr. Sundraji Mittra, 880, 887 Dharavi Road.
8. Mr. S. V. Vaki Mohd, 189/191 C, Dharavi.
9. The Western India Tanneries Ld., Dharavi Road.

Gadag.

Messrs. The Karnatak Tannery Co. .. .. .. B

Godhra.

1. Messrs. Abdul Majid Usman .. B
2. Messrs. Abdulla Musa & Co. .. B
3. Haji Abdul Rahman .. .. B
4. Haji Ibrahim Usman .. .. B
5. Messrs. Haji Ismail Halila & Co. .. .. .. B
6. Messrs. Ibrahim Afzal Mafat .. B
7. Messrs. Isa Haji Ummer Mafat .. .. .. B

Poona.

1. Mr. Kashiram Shavji New Tannery, Kondwa Road.
2. Mr. Narayan Hemaji, Canning Road, Wanori.

Satara.

1. Mr. Ghaus Appa, Malhar Peth.
2. Mr. Mahadev Limaji, Malhar Peth.
3. Messrs. Murli Ishwar & Sons, Malhar Peth.
4. Mr. Rama Appa, Malhar Peth.
5. Mr. Rama Dagadu, Malhar Peth.
6. Mr. Shankar Limaji Tapase, Malhar Peth.

Sholapur.

1. Mr. Mahadev Kalu, Camp .. B
2. Mr. Narsu Prabhu, Camp .. B
3. Mr. Shiva Tukaram, Camp .. B
4. The Sholapur Leather Works C & B
5. Messrs. S. T. Peer Mohammad C & B

CENTRAL PROVINCES & BERAR.

Nagpur.

Mr. Kudrat Ali Seth, Lalganj Kamasan.

Raipur.

Messrs. J. A. Razir & Co., Bhatagaon.

Saugor.

Messrs. K. S. Fakir Mohd, Khamasia.

MADRAS PROVINCE.

Coimbatore.

1. Messrs. A. K. Krishnaswamy Naidu, Rangaih Gounden Street.
2. Messrs. C. Mohd. Yusuf & Sons, Rangaih Gounden Street.
3. Messrs. H. M. S. Abdul Rahiman & Co., Rangaih Gounden Street.
4. Mr. Kanniah Naidar, Rangaih Gounden Street.
5. Messrs. Kanthima Naidu & Sons, Rangaih Gounden Street.
6. Messrs. M. Mohd. Sahib & Co., Rangaih Gounden Street.
7. Mr. S. Varshi Mohd., Fish Bazar Street.
8. Messrs. T. M. Abdulla Varsha Rowther, Fort.
9. Messrs. V. Govindasami Naidu & Bros.

Ellore (Dist. West Godavari).

1. Messrs. Katheef M. K. Md. Aboobakar Naina Labby.
2. Messrs. K. S. M. Abdul Khadar & Co.
3. Messrs. L. M. S. Shadiq Thumby & Co.
4. Messrs. M. Karim Baksha.
5. Messrs. M. K. M. Shabul Hamid, Akkilit Tannery.
6. Messrs. M. K. M. Md. Osana Labby.
7. Messrs. M. M. Mohiudeen Thumby & Co.
8. Messrs. M. R. M. D. Abubakkar & Co.
9. Messrs. S. A. L. Abdul Aziz & Co.
10. Messrs. S. M. Shadiq & Bros.
11. Messrs. S. R. A. R. & Co.

Kallugumalai (Dist. Tinnevelly).

1. Mr. Mohd. Kamal Marakayar.
2. Mr. Poosa Pillai.
3. Messrs. T. S. Mohamed Kasim Maryakar.

Kayathar (Dist. Tinnevelly).

1. Messrs. A. K. Mohammad Meeran Lappai Rowther.
2. Messrs. M. K. Meerathan Labbai.
3. Messrs. P. K. Mohamad Rowther.

Kurnool.

1. Sheikh Meeran Sahib, Dhone.
2. Mr. Abdul Rahman, Budavarapeta.

Madras.

1. Messrs. A. M. Maulvi Athan Moiudeen & Co., 9, Rampillai Street, Periamet.
2. Messrs. A. M. Muniswami Mudaliar & Co., 14, V. V. Koil Street Periamet.*
3. Messrs. C. A. Haji Mohd. Kasim, 2|49, Vepery High Road, Periamet.*
4. Messrs. C. L. Abdul Suban & Co., 45, Vepery High Road, Periamet.*
5. Messrs. The Chrome Leather Co.
6. Messrs. Dost Mohd. Company, 38, Angappa Naick Street.*
7. Messrs. E. K. Haji Mohd. Meera & Co., 13|A, Sydenham Road, Vepery.*
8. Messrs. Fazalboy Dhalla & Co., 7, Sydenham Road, Periamet.*
9. Messrs. Faze Karim, 1|235, Angappa Naik Street.*
10. Messrs. Gordon Woodroffe & Co., North Beach Road.*
11. Messrs. Haji Ghulam Husein & sons, 63|64, Moore Street.*
12. Messrs. Haji Mohd. Ismail & Co., 17, Sydenham Road, Periamet.*
13. Messrs. Haji M. S. Abdul Rahman & Co., 78|79, Angappa Naik Street.*
14. Messrs. Haji Zaimulabdeen & Co., 27|28, Sydenham Road, Periamet.
15. Messrs. K. Abdul Wahab & Co., 8, Vepery High Road, Periamet.*
16. Messrs. K. H. Abdul Kadir Lal Bacha & Co., 8, Vepery High Road, Periamet.*
17. Messrs. K. M. Mohd. Abdul Kadir, 14, Sydenham Road, Periamet.*
18. Messrs. K. S. Abdul Aziz & Co., 16, Kumarappa Chetty Street, Periamet.*
19. Messrs. K. S. N. M. Khajumiyah Rowther, 67, Angappa Naik St.
20. Messrs. M. A. Abdul Aziz & Co., 3, Vepery High Road, Periamet.*

Madras—contd.

21. Messrs. M. Abdul Khaliq & Co., 17, Sydenham Road, Periamet.*
22. Messrs. Mia Haji Ismail & Co., 15, V. V. Koil Street, Periamet.
23. Messrs. Madras Industrial Leather Co., P. B. 1160, Washermanpet.*
24. Messrs. M. Jamal Moideen & Co., 16, Thambu Chetty Street.*
25. Messrs. M. K. Haji Mohd. Ishaq, 21, V. V. Koil Street, Periamet.*
26. Messrs. M. K. S. Mohd. Labbar & Co., 234, Angappa Naik Street.*
27. Messrs. M. M. Husain & Co., 32, Angappa Naik Street.*
28. Messrs. M. M. Mohideen Thambi & Co., 228, Angappa Naik St.*
29. Messrs. M. M. Saliab & Co., 21, Karpoora Mudaliar Street, Periamet.*
30. Messrs. M. O. P. M. Batcha & Co., 10, Rama Pillai Street, Periamet.*
31. Messrs. N. Abdul Wahab & Co., 19, Sydenham Road, Periamet.*
32. Messrs. P. Abdul Kadir & Co., 17, Kumarappa Chetty Street.
33. Messrs. P. H. Ayyar, A. P. Subramania Mudaliar & Co., 4, Nabi Khan Subedar Street, Periamet.*
34. Messrs. P. Haji Abdul Gaffar & Co., 16, Nabi Khan Subedar Street, Periamet.*
35. Messrs. P. Haji Baliha & Co., 4|5, Vepery High Road, Periamet.*
36. Messrs. P. Haji Mohd. Yakub & Co., 15, Kumarappa Chetty Street, Periamet.*
37. Messrs. P. R. M. Abdul Rahman & Co., 18, Muthu Gramani St., Periamet.*
38. Messrs. P. R. M. Razaullah & Co., 20, Karpura Mudaliar Street, Periamet.*
39. Messrs. Roshan N. M. A. Carim Oomar & Co., 34, Broadway.*
40. Messrs. S. Abdul Salam & Co., 6, Kumarappachetty Street, Periamet.*
41. Messrs. S. A. M. Safaullah & Co., 1, Nabikhan Subedar Street, Periamet.*

Madras—contd.

42. Messrs. Shanjeemull, Vepery High Road, Periamet.*
43. Messrs. Srinivas & Co., 10, Sydenham Road, Periamet.*
44. Messrs. S. M. Said, 34, Angappa Naik Street.*
45. Messrs. S. T. Abdul Shakoor & Co., 22, V. V. Koil Street, Periamet.*
46. Messrs. T. B. B. S Abdul Razak & Co., 23, Sydenham Road, Periamet.*
47. Messrs. V. Abdul Rahman & Co., 6, Vepery High Road, Periamet.*
48. Messrs. V. S. Mohd. Ibrahim, 34, Broadway.

Malapalyam (Dist. Tinnevelly).

Mr. Jamal Bukhari, Sevalakari Moopar Street.

Manjeshwar (Dist. Mangalore).

St. Joseph Tannery, P. O. Manjeshwar.

Passuvanthanai (Dist. Tinnevelly).

Mr. S. Ayyamuthu Pillai.

Rajahmundry.

1. Messrs. C. H. Janulahbudin & Co.
2. Messrs. L. M. S. Sadak Thamby & Co.
3. Messrs. N. M. Mohd. Anin & Co.

Thathankulam (Dist. Tinnevelly).

Messrs. K. M. Mohammad Meera Marayakar & Sons.

Tinnevelly.

Messrs. V. K. Miran Mohideen Labai.

Tuticorin.

Messrs. M. P. Ayyasamy Pillai.

Vellore.

1. Messrs. J. M. Abdur Rahman & Co., Shenbakkam.
2. Messrs. Kaka Hajee Mohammad Karumkampathur.
3. Messrs. Kaka Jaee Mohd. Issac, Karumkampathur.
4. Messrs. Roshen & Co.

MADRAS PROVINCE—concld.

Vizianagram.

1. Mr. Ahmad Khabul, Cantonment.
2. Mr. Agec Mirza Jaffar Krini, Raga.
3. Messrs. C. A. Abdul Salim & Co., Ramavaram.
4. Messrs. C. A. Haji Mohd. Kassim & Co., Hukkumpeta.
5. Messrs. J. Abdul Rahman & Sons, Khoye.
6. Messrs. K. Abdul Sattar Raga
7. Messrs. K. Abdul Wahab, Cantonment.

Vizianagram—contd.

8. Messrs. M. Hajee Mohammad Kasim & Co., Raga & Kothapata.
9. Messrs. N. Abdul Khaliq & Co., Kothapetta.
10. Messrs. N. Mohd. Hussein & Co., Raga.
11. Messrs. P. M. Abdul Salam, Raga.
12. Messrs. S. Haji Abdul Sattar, Hukkumpeta.
13. Mr. S. Ramaswamy, Raga.
14. Messrs. V. Abdul Shakoor & Co., Raga.

ORISSA.

Ganjam.

1. Messrs. M. M. A. K. Moiuddin Tannery Co., Chandramanipenth, P. O. Berhampur.

Ganjam—contd.

2. Messrs. Md. Yakub Sahib Tannery, Lochpada, P. O. Berhampur.

PUNJAB.

Jullundur City.

Messrs. Haji Khuda Bux Gulzar Mohd. Tannery, Abadpura.

Lahore.

1. Chaudhri Abdul Karim's Tannery, Opp. G. T. Road.
2. Haji Rahim Mohd. Abdulla Tannery.
3. Karim Dur Abdullah Tannery.
4. Mian Shamsuddin's Tannery.
5. Sheikh Nalu Bux's Tannery.

Multan.

1. Haji Khuda Bux Karim Bux's Tannery.
2. Haji Manawar Dinkh Muzaffar Mahmud's Tannery.

Multan—contd.

3. Messrs. M. Muzaffar Din & Co.'s Tannery.
4. Sh. Alla Ditta Mohd. Iqbal's Tannery.
5. Sh. Abdul Wahib Abdur Rahman's Tannery.

Nakodar.

Ch. Daulat Ram & Bros.' Tannery.

Sialkot.

1. Messrs. Kutab Din Ghulam Din's Tannery.
2. The Upper India Leather Works.

Wazirabad.

1. Mian Amir Bax Allah Din's Tannery.
2. The Wazirabad Tannery.

SIND.

Karachi.

Seth Ahulam Hyder Bundepalio Tannery.

UNITED PROVINCES.

Agra.

1. The Dayalbagh Tannery.
2. The Taj Tannery.

Cawnpore.

1. The Cawnpore Tannery.
2. Messrs. Cooper Allen & Co.

Cawnpore—contd.

3. The Delhi Tannery.
4. The Govt. Harness and Saddlery Factory.
5. The National Tannery.
6. The Shavan Tannery.
7. The U. P. Tannery.

INDIAN STATES.

BARODA STATE.

Baroda.

1. The Bawda Noor Tannery, Pani Darwaza.

Baroda—contd.

2. The North Gujrat Tannery, Mira Darwaza, Palan.

HYDERABAD STATE.

Hyderabad.

1. Messrs. A. E. Abdul Wahab, Mashirabad.
2. Mr. C. K. Kantiah, Mashirabad.
3. Messrs. Dalrah Tanning Works, Mashirabad.
4. Messrs. Dawood & Co., Jiahguda.
5. Messrs. Md. Abdul Aziz & Sons, Baharan.
6. Messrs. Roshan & Co., Mashirabad.
7. Mr. Syed Husain (Brickwale). Mashirabad.

Jalna.

Messrs. Abdur Razack & Co.

Warrangal.

1. Mr. A. Abdur Razak, Desaipet.
2. Mr. A. B. Abdus Samad, Lakshmipur.

Warrangal—contd.

3. Messrs. B. A. B. Md. Ghaus, Lakshmipur.
4. Mr. C. Abdul Qadir, Narasempet Road.
5. Mr. C. B. Abdul Malik, Desaipet.
6. Mr. C. S. Md. Ibrahim, Desaipet.
7. Mr. Gani Haji Abdur Razak, Lakshmipur.
8. Mr. K. Abdul Aziz, Desaipet.
9. Mr. K. Abdur Raman, Lakshmipur.
10. Mr. K. B. Abdur Rahman, Lakshmipur.
11. Mr. K. Abdus Shakoor, Desaipet.
12. Mr. K. M. Abdul Gafoor, Desaipet.
13. Mr. K. S. Abdul Aziz, Desaipet.

INDIAN STATES—contd.

Warrangal—contd.

14. Messrs. Khalilur Rahman Fazlur Rahman, Desaipet.
15. Mr. Mirza Rahman Beg, Lakshmipur.
16. Mr. M. Abdur Razaq, Lakshmipur.

Warrangal—contd.

17. M. N. Abdul Majid, Lakshmipur.
18. Mr. Sayed Maqdeen, Desaipet.
19. Messrs. V. V. R. Md. Yakub, Narasampet Road.

MYSORE STATE.

Bangalore.

The Mysore Chrome and Tanning Co., Mysore Road.

Jeevanhally.

1. The Bangalore Chrome Tanning Co.	C
2. Messrs. C. Abdul Hai & Co.	
3. Messrs. M. Abdul Subban & R. Khan & Co.	B
4. Messrs. Modi Abdul Kuddus & Co.	B
5. Muthoo Haji Md. Fakir & Co.	B
6. Pack themay Haji Baliha & Co.	B
7. Pellimeora Haji Abdul Wahab & Co.	B
8. Messrs S. A. Haji Zaniuladeon & Co.	B

Kodugondanahalli.

1. Mr. B. Hanumanthappa.
2. Messrs. B. S. Abdul Wahab & Co.

Kodugondanahalli—contd.

3. Messrs. C. A. K. Rasheed Ahmad & Co.
4. Messrs. C. Abdur Razak & Co.
5. Messrs. C. Abdul Zabhar & Co.
6. Messrs. C. Haji Md. Kasim & Co.
7. Messrs. C. Mohd. Ali & Co.
8. Messrs. C. Pappana & Co.
9. Messrs. C. Shabbir Ahmad & Co.
10. Messrs. H. C. Zamulabdeen & Co.
11. Messrs. H. E. Mohammadally & Co.
12. Messrs. M. A. Md. Batcha & Co.
13. Messrs. S. Abdul Salam & Co.
14. Mr. T. Abdul Majid.

Kolar.

Mr. Mustappa Sahib's Tannery.

GLOSSARY OF VERNACULAR TERMS USED IN THE REPORT.

A

Andaz	Approximate.
Aratdar, arhatdar	A commission agent.

B

Babul	The Acacia arabica tree.
Bahangi	A pole, the ends of which are connected by ropes to a flat contrivance for carrying loads, the pole being balanced on the shoulder.
Bara	An enclosure.
Bepari	A trader.

C

Chamar	The name of one of the low Hindu sub-castes. Persons belonging to this sub-caste are called or known as *chamars*. Their principal occupation is to recover hides from dead animals, occasionally tan them, and prepare cheap and crude leather goods.
Chappal	Sandal.
Charas	A large bucket made from partially tanned hides, used for drawing water from wells for irrigation purposes. Bullocks are used for pulling the *charas*.
Charsa	
Choot	An allowance in weight credited to buyers to cover dirt and other extraneous matter which might be adhering to the hides.

D

Dharamsala	A building used for accommodating, generally free of any charge, pilgrims and travellers for short periods.
Dhed	An alternative name for *chamar* in certain parts.
Dhore	An alternative name for *chamar* in the *Central Provinces*
Dole	A small bucket, made of partially tanned hides, used for drawing domestic-water from wells.

E

Ekka	A cart pulled by one horse.

G

Gowshala	A charitable institution or asylum for old, unserviceable, destitute or invalid cows, bullocks, calves, etc.

H

Hat	A periodical market.
Hisabana	A market charge levied for the services of the accountant.
Hundi	A bill of exchange or draft.

J

Jachandar	A hide selector.
Jhutka	A pony or bullock cart, in South India.

K

Kachcha	Literally raw or unfinished. The word has a wide range of meaning with reference to the context, *e.g., kachche* roads mean unmetalled roads.
Kamin	One belonging to the menial class.
Ktara	A buffalo-calf

लाल बहादुर शास्त्री राष्ट्रीय प्रशासन अकादमी, पुस्तकालय
Lal Bahadur Shastri National Academy of Administration Library
मसूरी
MUSSOORIE

अवाप्ति सं०
Acc. No............................

कृपया इस पुस्तक को निम्न लिखित दिनांक या उससे पहले वाप
कर दें।

Please return this book on or before the date last stampe
below.

दिनांक Date	उधारकर्ता की संख्या Borrower's No.	दिनांक Date	उधारकर्ता की संख्या Borrower's No.

Sukti	Trade name for hides cured by drying them in the

T

Thela	A long cart drawn by bullocks, etc.
Tonga	A two-wheeled carriage drawn by a pony.

V

Vettian	An alternative name for the *chamar*, generally u the South.

Z

Zamindar	A landlord owning cultivable land.

Marketing Series No.	Symbol No.	Name of Publications.	Price.
33	AMA. 29.	Handbook on the quality of Indian Wool	As. 8 or 9d.
34	AMA.	Abridged edition of the Report on the Marketing of Tobacco in India and Burma in *English*. (Under print).	As. 8 or 9d.
	AMA. 34.	Instructions regarding the Grading and Marking of Ghee, in connection with Agricultural Produce (Grading and Marking) (Ghee) Rules, 1938. (Under print)	
	AMA. 35.	Abridged edition of the Report on the Marketing of Rice in India and Burma in *English*.	As. 8 or 9d.
	AMA. 23.	Report on the Marketing of Sugar in India and Burma. (Under print)	Rs. 1-4-0 or 2s.
35	AMA. 31.	Abridged edition of the Report on the Marketing of Groundnuts in India and Burma in *English*	As. 8 or 9d.
36	AMA. 41.	Report on the Marketing of Hides in India and Burma	Rs. 1-4-0 or 2s.
	AMA.	Report on Co-operative Agricultural Marketing in India. (Under print)	Rs. 1-4-0 or 2s.
	AMA.	Report on Fairs, Markets and Produce Exchanges in India. (Under print)	Rs. 1-4-0 or 2s.
	AMA.	Report on the Marketing of Skins in India and Burma. (Under print)	Rs. 1-4-0 or 2s.
	AMA.	Report on the Marketing of Citrus Fruits in India. (Under print)	Rs. 1-4-0 or 2s.
	AMA.	Report on the Marketing of Coconuts in India and Burma. (Under print)	Rs. 1-4-0 or 2s.
	AMA.	Report on the Marketing of Lac in India. (Under print).	

380.141308844 ~~20407~~
Agr
LIBRARY
LAL BAHADUR SHASTRI
National Academy of Administration
MUSSOORIE

Accession No. 108652

1. Books are issued for 15 days only but may have to be recalled earlier if urgently required.
2. An over-due charge of 25 Paise per day per volume will be charged.
3. Books may be renewed on request, at the discretion of the Librarian.
4. Periodicals, Rare and Reference books may not be issued and may be consulted only in the Library.
5. Books lost, defaced or injured in any way shall have to be replaced or its double price shall be paid by the borrower.

Help to keep this book fresh, clean & moving

iring the above are requested to
il Lines, Delhi, (b) Book Depot,
agents for the sale of Govern-
of the High Commissioner for